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AID TO AFRICAN AGRICULTURE

LESSONS FROM TWO DECADES OF DONOR EXPERIENCE

UMA LELE, EDITOR

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THE MADIA STUDY

Although many generalizations have been made about the agricultural crisis in Africa, relatively few detailed country and cross-country studies of African agriculture based on systematic data analysis have been conducted. Similarly, although foreign aid has constituted a large part of total government expenditures in Africa for close to fifteen years, there has been little analysis of the role of external assistance in African countries that goes beyond political criticism of official assistance or the alleged self-serving objectives of donors. The impetus for the study "Managing Agricultural Development in Africa" (MADIA) was to begin the process of filling this gap and to explain the nature and sources of the agricultural crisis, particularly the extent to which it originated in resource endowments, historical and contemporary events, external and internal policies, and the economic and political environment.

The MADIA study involved detailed analysis of six African countries—Kenya, Malawi, Tanzania, Cameroon, Nigeria, and Senegal. In addition to the World Bank, seven donors, USAID, UKODA, DANIDA, SIDA, the French and German governments, and the EEC participated in the study. The analysis of country policies and performance during the last 20-25 years was carried out with the benefit of substantial input from the governments and nationals of each of the countries represented. The study had three main areas of focus: (1) the relationship between domestic macroeconomic and agricultural policy and agricultural performance, (2) donors' role in the development of agriculture, and (3) the politics of agricultural policy.

The MADIA study was the result of encouragement and support from many people. Anne Krueger, former Vice President for Economic Research Staff in the World Bank, encouraged the establishment of these studies on aid and development in 1984. Gregory Ingram, former Director of the Development Research Department, provided unstinting support for the study. During the reorganization of the World Bank in 1986, the strong support from Benjamin King, then acting Vice President for Economic Research Staff, proved invaluable. Barber Conable, President of the World Bank, and Mr. Edward V. K. Jaycox, Vice President for the Africa Region, have played a key role by ensuring support for the study's completion, as did Stanley Fischer, the Vice President for Development Economics. Yves Rovani, Director General of the Operations Evaluation Department, was particularly helpful as the MADIA study drew heavily on the works of OED.

A special debt of gratitude is owed to the World Bank's Research Committee, which provided the initial funding for the study, and to the MADIA Steering Committee. In particular the strong support of the chair of the Steering Committee, Stephen O'Brien, has been of critical importance.

Finally, without the active and continued encouragement of many African policymakers and donor officials, including numerous colleagues in the World Bank, this study would not have provided new perspectives. This support has taken the form of numerous reactions to written and oral presentations, and refinement of the analysis to identify the areas of consensus and continuing controversy.

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DISCUSSION DRAFT ONLY

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Preface

In virtually all countries of Sub-Saharan Africa, the agricultural sector is of overwhelming importance in generating employment, income, exports, savings, government revenues, and raw materials for industry, as well as in providing a market for goods and services produced in nonagricultural sectors. It is increasingly recognized that the current economic crisis in these countries is a consequence of the deterioration of their agriculture. Despite nearly three decades of efforts by national governments and development assistance from donors, agricultural production in Africa has not kept pace with population growth. Yet very little systematic, data-based analysis has been undertaken by either governments or donor agencies to develop an in-depth, country-by-country, and cross-country understanding of Africa's agricultural problems.

The MADIA Study

In response to these concerns, a cross-country comparative study, "Managing Agricultural Development in Africa" (MADIA), was undertaken in the World Bank in 1984 with the active collaboration of seven other donors and six African governments. The chief purposes of the study were to determine the sources of growth in the agricultural sectors of selected African countries in their postindependence period, to assess the extent to which domestic policies, the external economic environment, and donor assistance have contributed to this growth, and to identify potential sources of future growth. The study also explored the interaction between national politics and agricultural policymaking in these countries.[1] The results of the MADIA study were intended to serve as a basis for discussion between African governments and donor agencies on how best to use internal policies and external assistance to enhance agricultural production and productivity in Africa.

The MADIA sample of countries includes Kenya, Tanzania, and Malawi in East Africa, and Nigeria, Cameroon, and Senegal in West Africa. These six countries account for 40 percent of the population of Sub-Saharan Africa, and for 50 percent of its GNP. They include almost all the ecological zones of Africa—ranging from the Sahelian and the Guinea-Savannah zones in the North to the equatorial rain forest in the South, as well as the volcanic, humid, and subhumid highlands of East and West Africa. As a group, the sample countries grow almost all the major crops of Africa, including tea, coffee, cocoa, tobacco, cotton, groundnuts, cashews, sisal, sugar, maize, sorghum, millets, and rice. The sample comprises two oil-exporters and four oil-importers; two land-surplus countries and four land-short countries; and five countries with relatively stable political environments and one that has experienced substantial political instability. While three countries have achieved good rates of agricultural and economic growth, the others have not—yet the agricultural sectors of both sets of countries can boast important success stories.

In general, the six countries have enough features in common to permit a fruitful comparative analysis for explaining the variations among them in agricultural and overall economic performance. The causal variables determining performance can be divided into three categories: (1) *luck factors*, including the natural resource base and inheritance of physical, social, and institutional capital, as well as the subsequent impact on these of any external or domestic shocks of an exogenous nature; (2) *macroeconomic policies*, including exchange rate and price policies resulting in explicit or implicit taxation of agriculture, and the levels and quality of public expenditures; (3) *sectoral policies*, including those that affect the mobilization of land, labor, credit, and other inputs, as well as the development of physical and institutional infrastructure, and agricultural research and technology. The distinction between these three sets of variables is an important one—it permits a systematic analysis of the interaction between resource endowments (broadly defined) at the disposal of governments, and the policy responses devised to manage these resources in order to achieve specific developmental goals in the face of unforeseen shocks.

The eight donor participants in the study are the World Bank, the United States Agency for International Development, the Swedish International Development Authority, the Danish International Development Agency, the United Kingdom Overseas Development Administration, the Commission of the European Communities and the governments of France and West Germany. Together, they have provided nearly 60 percent of aid flows to Africa. Although the level and content of their assistance has varied widely, different combinations of these donors have been important in providing financial assistance as well as policy advice to each of the six recipients.

A conceptual approach to the study. Analysts of long-term growth who have emphasized the crucial role of agriculture during the early stages of development have also stressed the importance of raising the productivity of a large number of small farmers to ensure breadth in the growth process.[2] They have demonstrated the interrelationship between the structure of agricultural production and the structure of consumption, savings, investment, and the pattern of demand that such broad-based development generates—and thus the types of *growth linkages* that are generated internally between the agricultural and the nonagricultural sectors, and externally between domestic and international markets.[3] These linkages critically affect both the *pace* and *robustness* of growth.

While early approaches to growth theory stressed the relationship of capital accumulation to the growth process, economists have subsequently come to highlight the greater contribution to growth of "nonconventional" forms of capital (technological change and knowledge acquisition) relative to that of conventional factors of production (land, labor, and physical capital). Others have elaborated the different kinds of capital needed for growth—pointing out the complementarity among human, institutional, organizational, technological, and physical capital.[4]

The primary engine of robust growth is the private initiative of a large number of individual decisionmakers. Nevertheless, during the early stages of development, sound macroeconomic management and public expenditures on agricultural research, extension, transportation and other infrastructure, market information, and human resource development are critical in determining the rate at which capital accumulation can take place. The presence of

such accumulated capital, coupled with a broad set of price incentives determined by a combination of macroeconomic and sectoral policies, creates the conditions in which individual decisionmakers act to facilitate broad-based growth.

There are no theoretical criteria for judging the optimum allocation of public expenditures in this context. Absolute levels of expenditure may not reveal much about their utility. It is possible, however, to arrive at judgments about the *quality* of public expenditures by examining the *stability* and *balance* of capital and recurrent expenditures between developmental and nondevelopmental activities; and within the former, between directly productive sectors such as agriculture and indirectly productive sectors such as social services; as well as, more generally, between short-term achievements in physical production and long-term capacity building.

Furthermore, if the emphasis in agricultural development is on mass participation and the viability of growth, public expenditure patterns need to be viewed as part of a continuous and dynamic process. The paucity of resources available relative to the extent of rural poverty in Africa underscores the importance of selectivity in undertaking public investments as well as the need for *sequencing* and *phasing* them in the context of a long-term strategy.[5] Efforts to build long-term human and institutional capacity along with direct interventions in support of production allow a gradual but balanced accumulation of the different types of capital essential for sustained growth.

Criteria for expenditure quality need to be applied to external assistance as well—since substantial proportions of public expenditures in African countries are supported by a wide spectrum of bilateral and multilateral donors. Donor assistance has meant not only increased access to financial resources but also advice on development policy. Meanwhile, the literature on development financing—starting from the premise of the fungibility of financial capital—has concluded that the benefits of donor financial assistance stem less from the specific projects supported than from the marginal investments that donor assistance has helped governments to undertake. While this is true at the project level, the literature has generally not focused on the effects of the *size* of official capital flows (in relation to the size of recipient economies), on the *totality* of recipient government expenditures or their overall *quality*.

Overall, donors have critically influenced the development strategies of most African countries. Their assistance has been an important determinant of the rate of capital accumulation as well as its balance, and thus the source and breadth of productivity growth in these countries.

Purpose and Content of this Book

The use of external assistance has come under a great deal of criticism from both the left and the right extremes of the ideological spectrum. Critics have alleged that donor assistance does not further the growth process, that it serves mainly the strategic and commercial interests of donors, and that it taxes the poor in donor countries but serves mainly the political interests of recipient country elites.[6] Donor bureaucracies have at best been silent about this criticism, and at worst have ignored it. Clearly the various constituencies in aid-giving countries have had a profound influence on the levels and types of assistance received by different countries, as well as the general direction of development concerns that have been at the forefront of donor interest and commitment.[7]

Although donor agencies have undertaken numerous evaluations of their own projects, they do not generally investigate the broader effects of their assistance on a long-term basis. In any case, few such evaluations are available in the public domain for reasons other than those to mobilize additional aid. This book is therefore unprecedented in scope and content precisely because it attempts to evaluate and make public the donors' assessment of their own programs and projects. It evaluates the role that donor assistance has played in influencing the sources and patterns of growth (analyzed independently by the MADIA study) in the agricultural sectors of the six selected countries.

The donor studies. This book comprises eight donor studies that examine the pattern and content of development assistance of their respective agencies and the nature of its impact on the recipient MADIA countries.[8] It also includes a study of food aid to these countries.

The donor studies present the development assistance experience of the respective donors in the context of several important themes (although with varying degrees of emphasis):

(1) the nature of the donor country's policies toward promoting agriculture, its changing perceptions of recipient needs and goals, and its influence on recipients' agricultural priorities and policies;
(2) whether recipients' own perceptions of their development needs and priorities were taken into account by donors;
(3) whether assistance was provided in the context of a viable and well-defined macroeconomic and sectoral policy framework in the recipient countries;
(4) the impact of strategic, commercial, and humanitarian constituencies on the level and content of the donor's assistance, as well as the impact of various administrative, personnel, and financial constraints on aid programming;
(5) whether different donors are particularly well placed to provide particular forms of agricultural or other support.

Prompted by a concern that their assistance has not been very effective in Africa, the donors' primary interest in participating in MADIA's research effort has been to absorb the broad conclusions of the study as a whole, to compare their own experiences with those of other donors, to acquire new insights about the long-term factors influencing growth in Africa, and to explore the implications of the study for their assistance programs in the future. By financing the aid component of the study, by providing donor country nationals to undertake the analysis in consultation with recipient countries, and by helping in the dissemination of the findings, donors have helped to define the study's scope and direction.

The joint participation of donors and recipient governments has ensured that the study is forward-looking and positive in outlook, and that it draws valuable lessons for future economic strategies from close scrutiny of many years of development experience instead of simply recapitulating the past.

Introduction

Measuring the Effectiveness of Donor Assistance

No straightforward economic or social measures of the impact of donor assistance on recipient countries exist. The use of strictly *quantitative* indicators of effectiveness is fraught with both conceptual and practical difficulties. For example, external assistance is only one of a number of interacting forces—such as macroeconomic and sectoral policies, and the availability of physical and institutional infrastracture—that influence agricultural growth. The impact of donor programs can therefore only be considered in the broader context of the macroeconomic and sectoral environments in which they are executed. Assistance from an individual donor typically constitutes but a share of project (or nonproject) funds and comprises a set of activities within a wider framework of government and/or multidonor support. This makes it difficult to assess separately the success or failure of individual donors in achieving the objectives of a particular undertaking.

Simple indicators that rely on quantitative data such as benchmark rates of return on investments or cost-benefit ratios provide only a partial picture for at least two reasons. First, as is particularly evident in the case of food crop production in Africa, such data, if available, are often inconsistent and unreliable. Second, it might be impossible to assign a definite value to the output from certain types of donor activities—for example, the provision of welfare services and the development of human resources, the provision of technical assistance unrelated to any specific project, or the application of very large structural adjustment loans to economies in fundamental disequilibrium (a practice that has gained considerable momentum in the 1980s). Therefore, it is extremely difficult to subject the diversified programs of agricultural assistance characteristic of most donors to systematic cost-benefit analysis and to develop objective indicators of effectiveness that can be reasonably compared across countries, crops, or time periods.

Moreover, such an approach would be static and necessarily short-term in focus. It would ignore the unquantifiable externalities associated with factors such as institution building and learning-by-doing that beget measurable results over a much longer time period. For example, institution building is a lengthy and complex process that normally cannot be accomplished within the time horizon of a single project or even a series of structural adjustment loans. The very nature of the growth process—essentially long-term and dynamic—thus renders quantitative assessments offered at project completion tentative at best.

Therefore, it is far more important to assess the contribution of donors in terms of the recipient's achievement of broader, long-term goals of agricultural and overall economic development. Such an approach necessarily entails the use of both macro-level and sectoral information to gauge the various externalities associated with project and nonproject assistance—a more difficult task than evaluating an undertaking simply in terms of the very specific inputs and outputs envisaged in its design and objectives. The role of subjectivity in this type of assessment is therefore commensurately greater.

Taking into account this broader approach to the assessment of donor experience, this introductory chapter is divided into two main sections: the first section provides an account of the international developments that affected the levels and content of donor assistance going to the six MADIA countries; and the second section examines the internal macroeconomic and sectoral conditions in these countries that determined the observed patterns of growth and in part the effectiveness of this external assistance. These two sections provide an analytical context in which to review the discussion of donor experience in the various donor studies, as well as in the synthesis chapter.

The International Context

Overall Flows of Official Development Assistance to the MADIA Countries

The 1973-74 drought was a watershed in the nature and level of external assistance to Africa.[9] The rise in world market prices of cereals—caused in part by the drought and the simultaneous depletion of world food stocks by U.S. wheat sales to the Soviet Union—intensified concern about the increasing vulnerability of the least developed countries to international fluctuations in food supplies. At the time, donor concern about food security, poverty alleviation, and equity in Africa also reflected a wider intellectual consensus about the failure of the green revolution in Asia to result in "trickle down" benefits for the poor majority and the poor prospects for the primary commodity exports of developing countries.

Noting the rising internal prices of food crops relative to their primary commodity exports, African governments resolved to achieve food self-sufficiency—an objective that they felt had been ignored by the colonial powers earlier. More generally, they desired to diversify out of colonial modes of production and export and to modernize through industrialization.

These developments precipitated a series of international articulations of the need to make a direct "Assault on Poverty."[10] Robert McNamara's Nairobi speech in 1973 and subsequent World Bank publications provided the most respected expression of these concerns as well as their implications for donor policies. Manifestations of this emerging theme were also under way in other donor agencies—for example, the Congressional mandate in the United States and the various White Papers in Britain as noted by Bruce Johnston, Allan Hoben, and William Jaeger,

as well as John Howell, in their respective studies on U.S. and U.K. assistance in this volume.

These new concerns about poverty alleviation resulted in a massive increase in total official development assistance (ODA) to Africa. For example, Swedish, Danish, German, and World Bank assistance to Sub-Saharan Africa nearly doubled (in real terms) during 1975-79 compared to the 1970-74 period. In particular, the share of resources allocated by donors to agriculture and rural development rose sharply. The World Bank adopted an informal guideline that these sectors should receive 25 percent of its total assistance. As pointed out by Lele and Jain in their study on World Bank assistance, Bank commitments (in current dollars) to agriculture and rural development during 1975-79—as compared to the period 1970-74—rose twelvefold in Nigeria, sevenfold in Cameroon, sixfold in Kenya, and doubled in Tanzania, Malawi, and Senegal. Other donors operated under similar pressure to disburse large amounts of assistance.

Within the agricultural and rural sectors, the policy attention of governments and donors shifted toward support for food crops, toward areas of low resource potential where the majority of the poor lived, and more generally, toward the achievement of equity objectives. In the process, donor assistance contributed substantially to public sector expansion in the MADIA countries.

By the late 1970s, the combination of a series of developments had begun to produce serious macroeconomic problems in many African countries. Major contributory factors were the two oil price shocks the decline in Africa's terms of trade owing to the prolonged recession in the industrialized countries, the expansionary domestic policies in African countries following the beverage boom in the mid-1970s, and—not least important—the steep rise in total official capital inflows in circumstances of inadequate internal capacity for sound macroeconomic management.

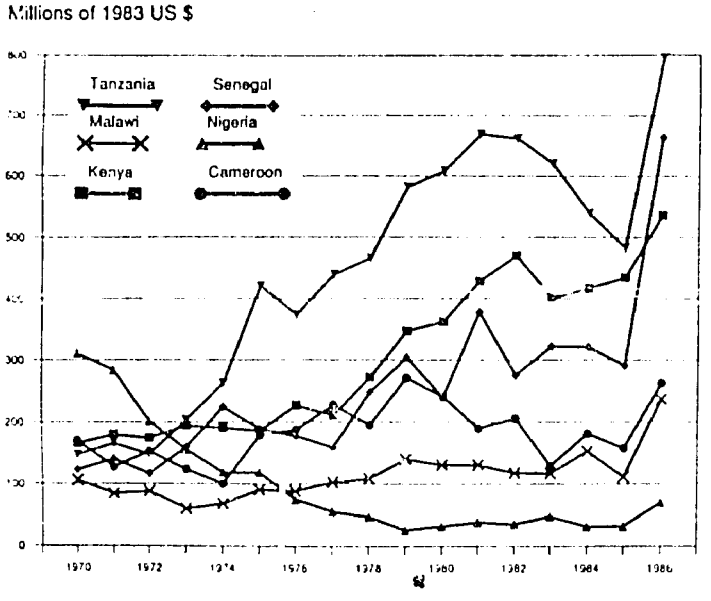
Donor concern about the large size of inefficient public sectors, the constrained role of the private sector, and the inadequacy of internal incentives for increasing agricultural production—all reflected in the Berg Report in 1981—intensified.[11] The implementation of large portfolios of rural development projects had become a financial and administrative liability for both governments and donors.[12] With the increasing recognition that a sound macroeconomic and sectoral policy environment is essential for effective interventions in support of growth, there was a shift in the focus of development assistance toward internal policy reform. The concern about equity and poverty alleviation in Africa—that had captured the imagination of donors in the wake of the Sahel drought—were replaced by the pursuit of efficiency objectives.

Greater aid coordination among various donors in support of policy reform in the 1980s has drawn criticism from recipient countries which, in the 1970s, had played off one donor against another in order to maximize their aid receipts in the absence of policy conditionality. Because donor contributions in the 1970s, by and large, forwarded the sociopolitical and developmental objectives that recipient governments intended to pursue, far less objection was raised to the large donor role than in the 1980s, when donor assistance has been more explicitly geared to internal reforms and has hurt the vested interests built around the previous aid strategy The current shortage of donor resources compared to the relative largesse of the 1970s, combined with declining specialized expertise—and, hence, declining quality of donor advice—has made these external influences even less acceptable to recipients.

Trends in Flows of Donor Assistance

Figure 1 shows that, in terms of constant 1983 dollars, Tanzania received the highest levels of official development assistance (a peak of $669 million in 1981), followed by Kenya ($470 million in 1981), Senegal ($378 million in 1980), Malawi ($140 million), Cameroon ($271 million in 1979), and Nigeria (which received very little ODA in the 1970s). On a per capita basis, Senegal received the highest level of ODA (averaging $41 in 1983 dollars), followed by Tanzania ($24), Cameroon ($22), Kenya ($19), and Malawi ($19). With the intensification of the domestic crises in recent years, ODA inflows have risen sharply in all the countries since 1985.

Figure 1
Total Official Development Assistance (ODA) received by MADIA countries, 1970-86 (in millions of constant 1983 U.S. dollars)



Source: Cancian 1987

The ranking of countries is similar when Total Receipts Net (TRN) are considered.[13] Senegal averaged $56 per capita of TRN (at constant 1983 dollars) over 1970-84, followed by Cameroon, Kenya, Tanzania, and Malawi, which averaged $42, $32, $29, and $23, respectively.

One feature that distinguishes the six countries (and African countries, in general) from their larger Asian counterparts has been the number of donors supporting development efforts. In Tanzania, for instance, 32 donors contributed a total of $6.3 billion in ODA during 1970-84. Kenya and Malawi received $4.2 billion and $1.5 billion, respectively, from a total of 31 different donors. In West Africa, Senegal received nearly $3.4 billion from 30 donors. Even though Cameroon and Nigeria attracted relatively less ODA ($2.7 billion and $1.6 billion, respectively) than the others, they were supported by a total of 27 and 25 donors, respectively.

Data on the share of ODA in government expenditure provide some indication of both the extent of a recipient's direct dependence on external resources and the degree to

which donors can exert a less tangible—but nevertheless real—influence over the recipient's development strategy. Examination of the share of ODA in government expenditures also prompts questions about the effectiveness with which high levels of donor assistance can be used by recipient governments at early stages of development, and the relationship of effectiveness to the pattern of allocation among sectors.

ODA has constituted a large percentage of government expenditures in all MADIA countries but Nigeria. It has been substantially larger in Malawi and Senegal (averaging 44 percent and 42 percent, respectively, during 1970-84) than in Tanzania, Cameroon, and Kenya (where the averages are 32 percent, 23 percent, and 22 percent, respectively). In Senegal, 63 percent of government expenditures were financed by ODA in 1982 (see Figure 2).

The stability of donor assistance can be as critical a factor as its volume in determining effectiveness. As Johnston et al. point out, U.S. assistance to the MADIA countries has been particularly unstable. Changes in aid levels can create difficulties for governments with high ratios of external assistance to domestic expenditure—with major adverse consequences for the planning of development programs, as well as for the recurrent budgetary support that is typically needed to keep projects operating in recipient countries. In Senegal, for example, year-to-year fluctuations in ODA levels have exceeded 20 percentage points.

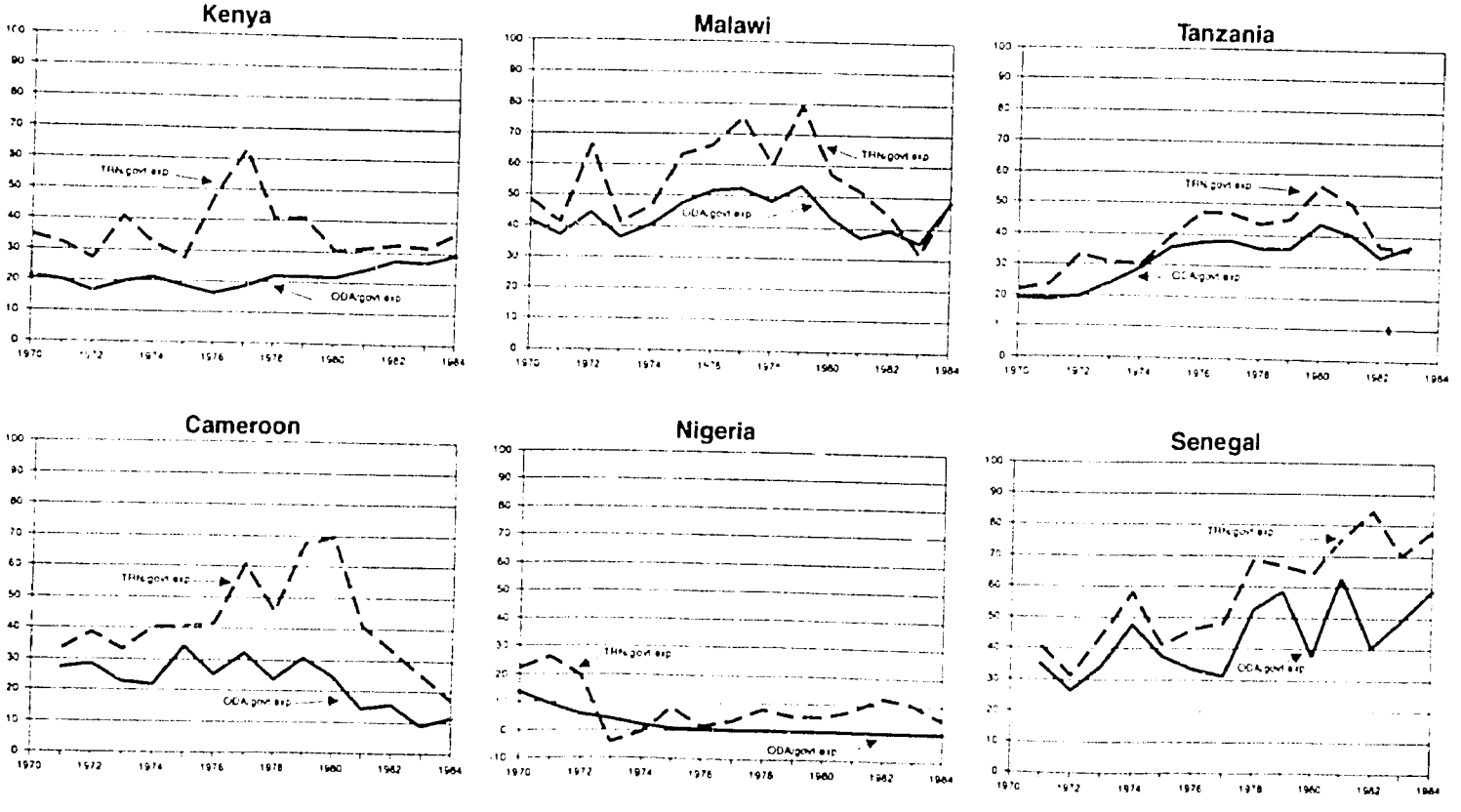
Nonproject assistance for structural and sectoral adjustment, which has become important in the 1980s, has altered the pattern of official capital flows considerably. Until June 1988, the six countries had received a total of $1.7 billion in nonproject loans and credits from the World Bank. Nigeria received the largest amount of this type of finance and accounted for 32 percent of the total ($532 million). While Senegal's nonproject assistance amounted to a 14 percent share ($242 million), Cameroon—a relatively better managed country—received no structural adjustment support during this period. In East Africa, Kenya's share of the total was 23 percent ($388 million), while Malawi and Tanzania each accounted for a 15 percent share (approximately $250 million) of the total.

The concessionality of the terms under which donor assistance is given significantly influences the level of the recipient's debt burden, i.e., the real cost of external assistance. The latter can be expressed in terms of the share of ODA in TRN. During 1970-84, Tanzania and Malawi received the highest shares of resource transfers on concessional terms: the share of ODA in the TRN accruing to these countries was 84 percent and 81 percent, respectively (see Figure 3). Senegal received 73.5 percent of total capital transfers in the form of ODA. Kenya with 61.7 percent and Cameroon with 52.4 percent attracted somewhat lower shares. Nigeria received less than 13 percent of its TRN as ODA.

The emergence of Nigeria and Cameroon as oil producers has meant a significant hardening of the terms at which donors have been willing to lend to them. In recent years, both countries have pleaded for increased concessionality—especially in the case of investments with long gestation lags, such as agricultural research. Because falling oil

Figure 2

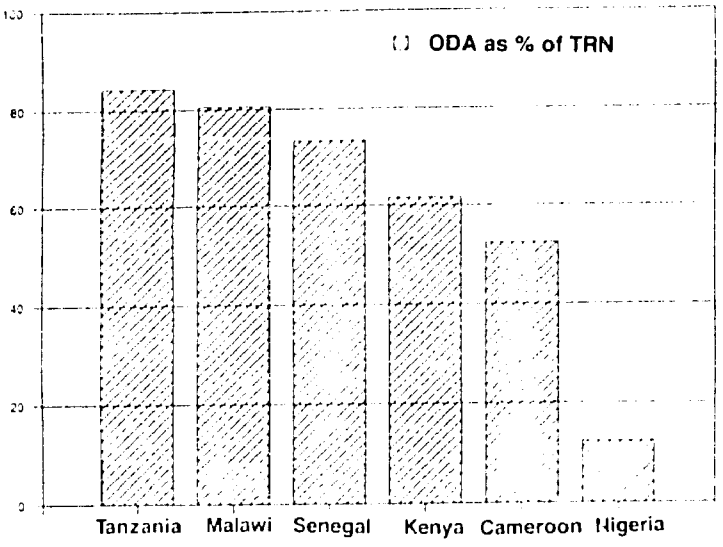
Official Development Assistance (ODA) and Total Resources Net (TRN) as a percentage of government expenditures in MADIA countries, 1970-84



Source: Cancian 1987.

Figure 3

Total Official Development Assistance (ODA) as percent of Total Resources Net (TRN) for MADIA countries, 1970-84



Source: Cancian 1987.

prices and the substantial devaluation of its currency (by about 800 percent) have reduced Nigeria's GNP per capita, Nigeria now qualifies for assistance from the International Development Association (the World Bank's soft-loan window).

Among the bilateral donors, Denmark, Sweden, and the United States have provided very high percentages of their assistance on concessional terms. On the other hand, in the cases of France and the United Kingdom, the percentage of TRN qualifying as ODA has been smaller—ranging from 31 percent to 63 percent of TRN from France to all the MADIA countries but Nigeria, and from 39 percent to 66 percent of TRN from the United Kingdom to the three East African recipients (see Table 1). Among the multilaterals, the IDA has provided 100 percent concessional assistance to all recipients. The European Community, in turn, has also provided a high percentage of ODA (varying from 74 percent to 100 percent) to all the MADIA countries but Nigeria.

Colonial connections, commercial interests, and the attractiveness of particular recipients' political and ideological orientations to particular donor countries have produced major differences in the relative importance of individual donors in concessional flows to each of the MADIA countries. Changes over time in individual donors' support for particular recipients both reflect and prompt changes in their relative influence, and especially in the impact of their policy advice.

In Kenya and Malawi, the United Kingdom, United States, Germany, and the World Bank have played major roles—accounting for nearly 45 percent and 60 percent of their total ODA receipts, respectively (see Figure 4). In Kenya, perhaps the most striking changes are: (1) the declining role of the United Kingdom and (2) the diversification in the sources of assistance. Howell as well as Lele and Jain point out that although many of Kenya's successes in smallholder agriculture—for example, in tea and coffee—can be explained by the inheritances of British institutions, policies, and technical expertise, the depletion of cotton research capability in much of anglophone Africa reflects the United Kingdom's withdrawal from the cotton industry well before local capacity was established.[14] This was accompanied by a major change in the character of U.K. technical assistance—from a long-term supportive presence in the colonial period to much shorter-term and smaller-scale assistance that has adversely affected its effectiveness. Declining U.K. assistance is also evident in Malawi, where the European Community has emerged as a major donor (and where the World Bank's role has increased after a decline in flows during the mid-1970s).

Ellen Hanak and Michael Loft, and Marian Radetzki point out in their respective studies on Danish and on Swedish assistance that the Nordic donors have been attracted by Tanzania's socialist ideology. Denmark, Sweden, and the Netherlands have together accounted for nearly a third of Tanzania's total receipts of ODA. Until 1984, for example, SIDA had provided three times as much assistance to

Table 1

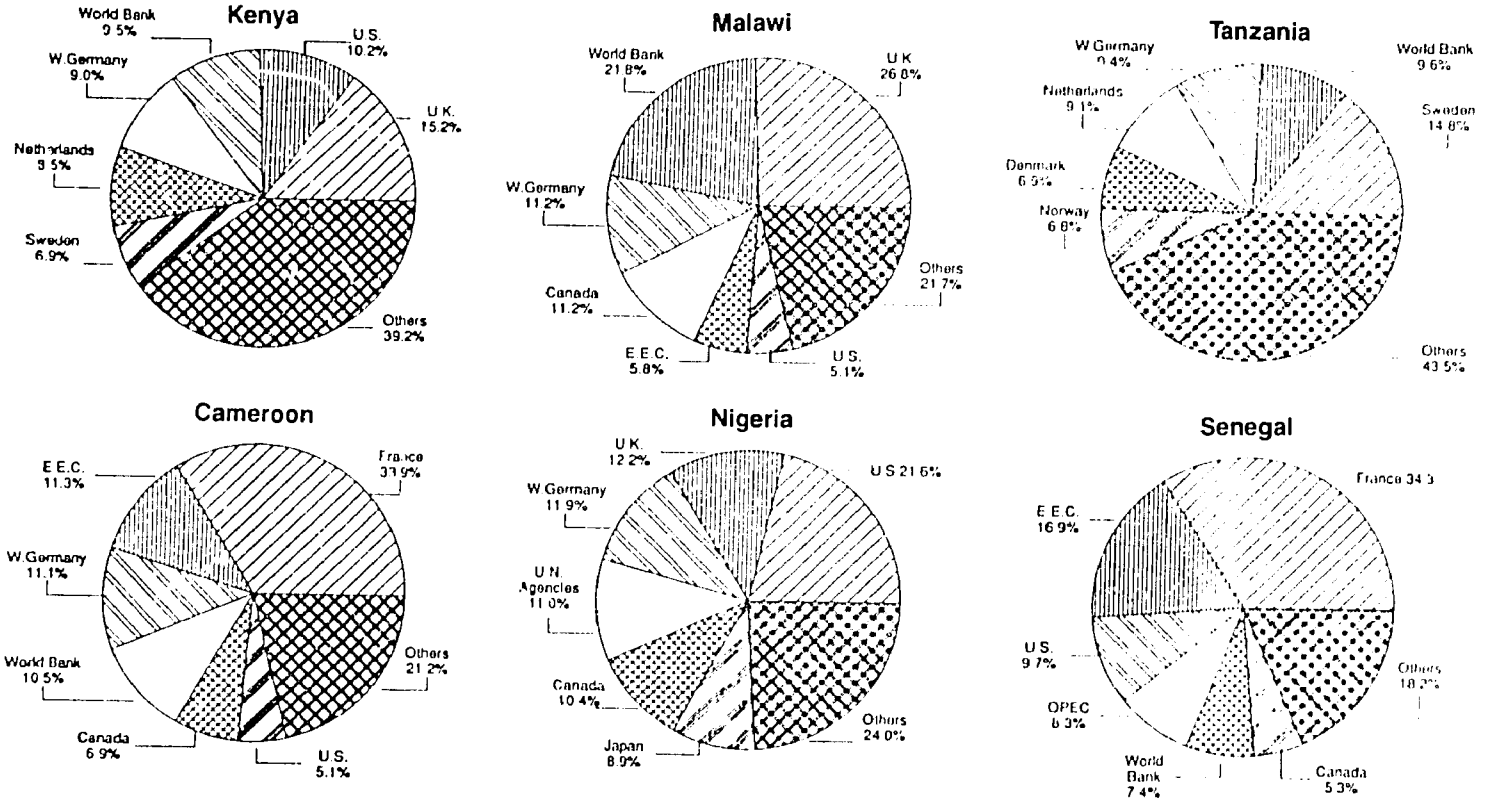
Official Development Assistance (ODA) as a percentage of Total Receipts Net (TRN) transferred from donors to MADIA countries (1970-1984 totals in millions of 1983 U.S. dollars)

Donors	Recipients																	
	Cameroon			Nigeria			Senegal			Kenya			Malawi			Tanzania		
	Total ODA	Total TRN	ODA as % of TRN	Total ODA	Total TRN	ODA as % of TRN	Total ODA	Total TRN	ODA as % of TRN	Total ODA	Total TRN	ODA as % of TRN	Total ODA	Total TRN	ODA as % of TRN	Total ODA	Total TRN	ODA as % of TRN
Bilateral																		
Denmark	22.5	41.8	54.0	7.8	250.2	3.1	30.6	32.0	95.8	205.0	207.5	98.8	56.0	56.1	99.8	433.3	448.1	96.7
France	908.4	2439.6	37.2	20.8	2108.5	1.0	1159.9	1854.4	62.5	59.2	186.4	31.8	10.9	17.2	63.1	31.6	102.2	30.9
Germany, F. R.	298.6	336.7	88.7	188.0	2066.7	9.1	142.5	165.3	86.2	444.9	614.5	72.4	177.5	198.6	89.4	590.5	632.0	93.4
Sweden	0.0	32.2	0.0	4.1	-13.6	-29.7	0.2	2.7	7.3	293.3	312.2	93.9	0.1	3.4	2.9	936.3	971.2	96.4
United Kingdom	48.4	159.5	30.4	192.4	3944.0	4.9	9.7	43.1	22.4	643.3	1646.3	39.1	424.5	647.3	65.6	361.7	608.0	59.5
United States	136.3	220.9	61.7	341.6	482.2	70.8	329.6	336.0	98.1	429.5	454.8	94.4	80.8	83.7	96.5	382.0	393.6	97.1
Multilateral																		
E. E. C.	304.5	343.8	88.6	16.6	41.6	39.8	570.3	596.5	95.6	169.5	228.7	74.1	91.9	103.8	88.5	242.5	243.2	99.7
IBRD	20.6	300.1	6.9	0.0	1098.2	0.0	19.0	98.6	19.2	13.2	940.8	1.4	17.6	72.3	24.3	41.8	305.7	13.7
IDA	262.1	262.1	100.0	34.6	34.6	100.0	230.6	222.2	103.8	389.0	389.0	100.0	327.9	327.9	100.0	563.2	563.2	100.0
Grand Total	2683.5	5125.5	52.4	1580.4	12794.8	12.4	3381.7	4598.3	73.5	4225.5	6852.9	61.7	1585.7	1968.4	80.6	6310.8	7477.5	84.4

Source: Cancian, "A Review of the OECD Databases."

Figure 4

Top six donors of Official Development Assistance (ODA) to MADIA countries, 1970-84



Source: Cancian 1987.

Tanzania as it had to Kenya, while DANIDA had provided twice as much. Moreover, it had little presence in agriculture—much of Sweden's assistance was concentrated in social services and industry. Indeed, the much greater share of donor resources going to industry and social services in Tanzania compared to other countries explains how Tanzania was able to maintain its pro-industrialization stance while neglecting agriculture. The support of these donors had enabled Tanzania to postpone reform measures promoted by the International Monetary Fund and the World Bank until well into the 1980s. However, a significant shift has occurred in the attitudes of even the donors due to their growing recognition of the importance of sound policy management and of strong recipient responsibility. In contrast to these comparatively new donors, Tanzania's traditional donors—for example, the United Kingdom and West Germany, both of which had long colonial connections with the country—had actually terminated their assistance in the 1970s owing to foreign policy differences over Southern Africa, but resumed it subsequently. Currently, a larger number of donors each contribute smaller amounts of assistance.

In West Africa—as Claude Freud discusses in his study of French assistance—donor-recipient relations also reflect colonial ties. France has been the chief donor in Senegal and Cameroon, providing 34 percent of the total ODA received by these countries. It has sustained (and, in Senegal, further strengthened) its leading role, in contrast to the United Kingdom in East Africa. While the European Community (which France joined in the 1960s) has increased its influence in Senegal, its shares in ODA and TRN flows to Cameroon have fallen. In Nigeria, the United Kingdom has provided nearly a third of total TRN transfers, while France and Germany have each accounted for a 16 percent share. The World Bank has been a major source of capital—particularly in the agricultural sector—since the departure of the United States in 1974 (after Nigeria joined the Organization of Petroleum Exporting Countries). While France and Germany are emerging as sources of nonconcessional assistance to Nigeria, the Bank's role in the agricultural sector has remained strong.

The Bank's share in ODA flows to a recipient can be considered an indicator of its influence in two quite opposite ways. The implications of contributing a large share in a recipient's total aid receipts has been noted. Yet in the case of the Bank, a relatively *small* share might mean lower direct financial influence but might imply a greater need for aid coordination—and hence a different but potentially significant opportunity for the Bank to influence policy.

In the 1970s, donor coordination based on policy packages was less significant than it is today. At the time, much of the World Bank's influence derived from the generally accepted authoritativeness of its country economic work and reports, its role as the organizer of donor consortia and consultative groups, and its emergence as coordinator of arrangements for cofinancing of projects.

Until the early 1980s, the Bank played a relatively minor role in the total volume of donor assistance channeled to the six countries. During 1970-84, The International Devel-

opment Association (IDA) accounted for only a 9.5 percent share of the total ODA recieved by Kenya and Cameroon. While the IDA's share was over 20 percent in Malawi, it was only 8.9 percent in Tanzania and only 6.8 percent in Senegal. The share of total Bank lending in total TRN received by Nigeria was only 9 percent; in East Africa, the share was 19 percent in Kenya, 20 percent in Malawi, and 12 percent in Tanzania.

Despite its relatively minor share in the total volume of donor assistance received by the six countries, the Bank's influence in promoting important development ideas was distinctly greater than that suggested by its ODA contributions—especially since the 1973 McNamara speech and the subsequent growth in the Bank's share in capital transfers to the developing countries. Among the MADIA countries, the Bank's expanding influence emerged earlier in the anglophone countries, as the Bank moved into the vacuum left by the declining role of the United Kingdom. Its influence on integrated agricultural development in the francophone countries increased as well.

As the scale of lending in support of policy reform has increased since the early 1980s (along with balance of payments support operations in which the Bank has played an important role), the Bank's influence on the pattern of official capital flows to recipients, and the associated policy reform packages, has risen considerably.

Several factors help explain this development. The Bank's breadth of experience and professionalism relative to that of bilateral (and even other multilateral) donor agencies is generally acknowledged, as is its international—and, in principle, nonpartisan—status. These have tended to give its presence and policy stance more weight. Second, the personal commitment of Mr. McNamara on poverty and of Messrs. Clausen and Conable on structural adjustment also played an important part. This is far from implying, however, that the Bank has not faced any criticism—indeed, it has attracted vociferous critics for allegedly helping countries favoring socialistic ideologies, encouraging public sector growth, and promoting welfare states in the McNamara years, and for an excessive private sector orientation and movement away from its earlier poverty alleviation stance during the Clausen and Conable periods.[15]

Within the donor community, support for policy reform and adjustment lending has been variable. The United States has been the most active supporter of the use of conditionality and lending for policy reform. The United Kingdom and Germany have, in general, aligned with the U.S. position, although they have been less involved in devising conditions for lending. France has exhibited somewhat greater reluctance in acquiescing to this type of lending as in several cases adjustment programs have attempted to dismantle some of the very institutions and policies it established.

The Domestic Context

Country Performance, Endowments, External Shocks, and Policies

Overall Country Performance

The countries whose agricultural sectors have grown the fastest have also been the best performers in terms of growth of both GDP as well as per capita GNP. In addition to their initial conditions or subsequent exogenous shocks, the macroeconomic and sectoral policies of the MADIA countries have been very important in explaining their performance. In general, the countries that have relied on their comparative advantage have performed well—and, ironically, achieved rapid diversification.

Kenya successfully capitalized on its initial resources to pursue—despite severe external shocks—a combination of macroeconomic and sectoral policies that permitted the achievement of broad-based agricultural growth. Despite the oil bonanza, Cameroon similarly followed moderate policies and performed well with a large number of small farmers participating in the production of *both* food and export crops. In addition, both countries achieved much better growth in their manufacturing sectors than did countries such as Tanzania and Senegal which explicitly favored capital-intensive, import-substituting industrialization over growth led by agriculture.

Despite unfavorable initial conditions and external shocks, Malawi—like Kenya and Cameroon—achieved a rapid increase in agricultural production in the 1970s. Despite good macroeconomic management, its sectoral pricing and land policies, however, were severely skewed in favor of an estate-led growth strategy that prevented the vast majority of smallholders from sharing in the gains.

Given favorable initial conditions, Nigeria made some progress in establishing the foundations of long-term growth by improving its physical and social infrastructure. Following the oil boom, however, its macroeconomic policies became highly adverse to agricultural development and led to rapid migration of labor to the urban sector. Coupled with persistent political and institutional upheavals, this prevented Nigeria from successfully utilizing the resources at its disposal, and agricultural production experienced a serious decline.

Tanzania and Senegal also performed poorly. Whereas adverse macroeconomic and sectoral policies played a part in both countries, Tanzania's far more favorable resource endowments, together with high levels of donor support, highlight the debilitating effects of an adverse policy environment on economic performance. Modest progress was achieved in attaining the government's objectives of equity and social welfare, but many of these gains could not be sustained due to the pursuit of an industrialization strategy that undermined broad-based agriculture-led growth. Senegal, pursuing a similar industrial strategy, attempted diversification out of its traditional export crops. In its case, increasing climatic irregularities and soil degradation were important factors underlying agricultural stagnation.

Prior to analyzing this performance in terms of each country's specific initial conditions, external shocks, and macroeconomic and sectoral policies, it needs to be viewed in the broader context of several major ongoing debates

about the appropriate balance between (1) export crop and food crop production, (2) resource-rich regions and remote and resource-poor regions, (3) growth and equity objectives, and (4) the relative roles of price and nonprice factors in enhancing agricultural performance.

Export Crops and Food Crops

Development debates and government and donor policies have not stressed the critical role of agriculture for the development of the rest of the economy. Instead of promoting policies that support *balanced* development of the agricultural sector as a whole, they have tended to emphasize the conflict between food and export crop production.

The attainment of food security is of fundamental importance in the farming decisions of small rural households.[16] Assured food crop production releases land and labor for diversification into other higher-value production for domestic use or export. Export crop production, however, helps raise and stabilize household and national income, thereby increasing food security. Due to labor intensity, export crops tend to generate greater employment than food cropping. Moreover, the production of most export crops tends to be scale-neutral and therefore can be undertaken by farmers with holdings of any size. Indeed, where marginal productivity in export crop production is high and the returns assured—as in the cases of tea and coffee in Kenya, or cotton in Cameroon—farming households have relied on the market for food out of choice—unlike their poorer rural counterparts who have depended on the market out of necessity. Despite these features, export crops were neglected by both governments and donors in the 1970s.

The following discussion contrasts the experience of Kenya, which has pursued an agriculture-led development strategy involving a large number of small farmers who have increased their production of both export crops and food crops, with the very different policy stances and performance records of several other countries in the MADIA sample, whose unbalanced positions either favoring or discriminating against the export crop sector have had adverse consequences for agricultural growth.

Resource-Rich Regions, and Remote and Resource-Poor Regions

One of the debates that has not yet occurred—or rather, that took place mainly by default in the 1970s—relates to the appropriateness of diverting scarce government and donor resources as well as policy attention toward poverty alleviation and food security in resource-poor regions, instead of concentrating on the development of other areas with better natural endowments or known technological potential.

In view of the resource intensity of smallholder production, agricultural investments need to be sequenced so that resources are initially channeled into activities and regions that have the greatest technological potential for growth and that yield substantial streams of output in order to reduce the burden on government and donor budgets. In the MADIA countries, this picture is complicated by the fact that due to the incidence of human and animal diseases and historical patterns of settlement, the areas of highest potential are not always those where population densities are the greatest.[17] While employment and income generation objectives lead to investments where population densities and political support for governments are usually the highest, weak transport networks can prevent markets from functioning and integrating effectively and from allowing marginal areas to share in the gains. Efforts to promote equitable food production and distribution regionally under such conditions can prove expensive. Therefore a strong production policy in areas of high agricultural potential needs to be accompanied by strong consumption and welfare-oriented efforts in low potential areas (including policies to promote migration from such areas). Similarly, a policy emphasis on the areas of low productive potential and high population densities, or on remote but productive areas (in view of important objectives of nation building) must be accompanied by a willingness to tolerate slower growth while an appropriately targeted long-term strategy is given a chance to work.

The example of Tanzania is used to show how—despite substantial donor assistance and its own efforts to open up new areas of high potential—its tendency to discriminate against the traditional areas of proven growth potential together with its policy of quick universal coverage of welfare services to all rural areas made it financially impossible to maintain many of its long-term developmental efforts in the productive and social sectors.[18] Hanak and Loft, as well as Radetzki, discuss this in greater detail in their respective studies. Similarly, Lele and Jain show that in the case of Nigeria, large investments by the government as well as the World Bank in the relatively resource-poor (but politically important) areas of the North did not lead to much growth.

Growth and Equity Objectives

Development economics literature in the 1970s tended to emphasize the extent of complementarity rather than competition between growth and equity objectives. It did not give adequate consideration to the key determinants of growth and equity outcomes—in particular, the profile of asset distribution in a given economy and the substantial public sector planning and implementing capacity needed for the provision of public goods in support of smallholder production. These two factors critically determine the time horizon within which growth and equity objectives can be reconciled. Evidence from Kenya, Tanzania, and Malawi is used below to illustrate the extent of the trade-offs between growth and equity that have occurred during the short and medium run under specific country conditions.

The Relative Roles of Price and Nonprice Factors

The primacy given by donors to "getting prices right" in the 1980s has come under criticism from several analysts.[19] Examples from the three West African countries are used to show that price incentives are a necessary but by no means a sufficient condition for broad-based and sustained agricultural growth. A variety of nonprice factors—including the availability of effective agricultural research, extension, input supply, and output marketing arrangements—have played important roles in determining overall supply responses, as distinct from relative cropping shifts. Also explored below is the part that country-specific historical, political, and other unquantifiable factors have played in providing important preconditions of growth.

Agricultural Performance

Table 2 presents the growth rates of production and export of the major crops in the six countries over the period 1970-85. Kenya and Cameroon emerge as the best performers. In

Table 2
Agricultural performance in the MADIA countries (average annual percentage growth rate, by volume, 1970-1985)

	East Africa		
	Kenya	Malawi	Tanzania
Major agricultural exports			
Coffee	3.8%		0.8%
Tea	7.5%	5.2%	1.9%
Cotton		-12.5%	-2.3%
Tobacco		11.7%	-4.7%
Groundnut		-13.2%	
Horticulture	12.7%		
Production of Major Export Crops			
Smallholder			
Coffee	6.0%		2.3%
Tea	13.5%		13.7%
Tobacco		3.0%	-4.8%
Cotton	4.9%	1.1%	1.6%
Groundnut		-7.4%	
Sugar	16.9%		
Estates			
Coffee	1.0%		-4.1%
Tea	5.5%		1.0%
Tobacco		12.9%	-7.5%
Cotton			
Sugar		14.7%	0.8%
Food production			
Maize			
Production	3.9%	1.5%	2.1%
Official purchases	2.4%	19.1%	1.1%
Official sales	9.2%	23.7%	1.9%
Food Imports	6.4%	3.1%	3.0%
Food aid	43.1%	28.6%	23.5%

	West Africa		
	Cameroon	Nigeria	Senegal
Major agricultural exports			
Coffee	1.9%		
Cocoa	0.4%		
Cotton	4.6%		NA
Groundnut			-9.5%
Rubber	-5.9%		
Palm Oil	6.6%		
Production of Major Export Crops			
Smallholders			
Coffee	1.0%		
Cocoa	2.0%		
Cotton	8.3%		
Estates			
Rubber	2.7%		
Palm Oil	4.2%		
General			
Cotton			6.8%
Groundnut		-3.2%	
Cocoa		-4.9%	
Food Production			
Rice	16.5%	10.5%	1.2%
Maize	4.1%	6.1%	5.6%
Millet/sorghum	1.3%	0.2%	0.2%
Food Imports			
Rice		46.7%	7.3%
Wheat		15.2%	0.5%
Sugar		20.0%	-6.8%
General	6.1%		
Food aid	4.1%		

Source: World Bank Database (BESD).
Note: Growth rates averaged for certain crops, e.g., burley and flue-cured tobacco.
Growth rates for Nigeria production are calculated using FAO data.

Kenya, not only did the production of virtually all major crops increase, but the share of small farmers in their output increased substantially in relation to the output of large farms and estates. Moreover, higher smallholder production was not achieved at the cost of the estate sector—it increased mainly due to the increasing ability of small farmers to grow a variety of high value crops. While smallholder production increased due to area expansion (with yield growth in maize and coffee only), the estates were not able to mobilize additional land and increased their output mainly through yield growth. Kenya gained world market shares in both tea and coffee (see Table 3). Despite good growth in the production of hybrid maize as well as horticultural crops, Kenya's food production was outpaced by the high growth rate of population.

Cameroon's achievements were, however, less impressive than those of Kenya. While growth in production and export of coffee and cocoa—the two major export crops—was unimpressive, that of cotton and oil palm increased. Cameroon maintained its market share in all these crops. The production of traditional food crops kept pace with population growth. Although Cameroon continued to emphasize plantation agriculture, a large number of small farmers participated in the production of a range of food and export crops. An important development has been the growth of maize production (albeit from a small base) which shows much potential for growth as a food and feed crop in the long run. Among the West African countries, Cameroon was also the least dependent on food imports—with the exception of rice, imports of which increased rapidly with the sharp rise in internal demand from income growth and urbanization.

Malawi achieved high growth rates of production of estate crops, and increased its world market share in tobacco and to a lesser extent in tea. Smallholder production of both export and food crops, in contrast, showed little improvement. While yields on estates registered impressive increases (reaching an average differential of four times relative to yields in the smallholder sector, compared to a differential of about two times in Kenya), smallholder yields stagnated.

In Tanzania, both large and small farm export agriculture stagnated. Within the smallholder sector, as in Malawi, a major shift away from export crops to food crops took place in agricultural production until about 1986. In contrast to Kenya and Malawi, whose world market shares for major export crops increased, Tanzania's market shares in tea, coffee, and cotton either stagnated or declined.

In Nigeria, the production of most export crops declined and it lost shares in the world market for palm oil, cocoa,

Table 3
Export volumes, shares, and growth rates of major crops of MADIA countries and their major competitors (1961-86): average values for indicated periods (volume in thousand metric tons)

Crop	1961-63 Volume	1961-63 Share	1971-73 Volume	1971-73 Share	1983-85 Volume	1983-85 Share	1961-86 Growth Rate
Cocoa Beans							
World	1,043.2	100.0%	1,185.1	100.0%	1,319.5	100.0%	0.74%
Ghana	417.0	40.0%	366.8	31.0%	158.2	12.0%	-4.05%
Cote D'Ivoire	96.4	9.2%	149.8	12.6%	384.9	29.0%	6.44%
Brazil	76.1	7.3%	101.4	8.5%	144.1	11.0%	2.65%
Ecuador	33.2	3.2%	42.9	3.6%	40.5	3.0%	-1.73%
Malaysia	0.3	0.0%	4.3	0.4%	68.3	5.2%	27.72%
Cameroon	70.5	6.8%	81.9	6.9%	86.2	6.5%	0.59%
Nigeria	187.3	18.0%	237.7	20.1%	143.2	11.1%	-2.75%
Coffee							
World	2,910.3	100.0%	3,559.9	100.0%	4,220.6	100.0%	1.54%
Brazil	1,057.2	36.3%	1,051.9	29.6%	1,001.7	23.7%	-1.39%
Colombia	366.9	12.6%	396.4	11.2%	574.5	13.6%	2.52%
Cote D'Ivoire	160.6	5.5%	195.5	5.5%	216.3	5.1%	1.71%
Angola	140.1	4.8%	192.4	5.4%	22.7	0.5%	-8.39%
Mexico	85.1	2.9%	111.5	3.1%	196.6	4.7%	3.71%
Indonesia	64.5	2.2%	94.0	2.6%	273.7	6.5%	6.54%
Cameroon	39.2	1.3%	70.6	2.0%	90.8	2.2%	3.49%
Kenya	34.3	1.2%	65.0	1.8%	97.3	2.3%	5.03%
Tanzania	25.9	0.9%	50.2	1.4%	49.8	1.2%	2.28%
Cotton							
World	3,647.9	100.0%	4,299.2	100.0%	4,294.9	100.0%	0.82%
USA	1,103.8	30.1%	961.2	22.2%	1,265.1	29.4%	1.20%
Mexico	366.8	10.1%	182.9	4.3%	85.7	2.0%	-6.35%
USSR	349.2	9.6%	642.4	14.9%	691.6	16.1%	3.55%
Egypt	278.5	7.6%	304.4	7.1%	175.7	4.1%	-3.31%
Brazil	214.5	5.9%	264.6	6.2%	99.7	2.3%	-10.76%
Pakistan	121.6	3.3%	216.3	5.1%	203.6	4.7%	1.79%
China	NA	NA	22.0	0.5%	203.3	4.7%	14.91%
Nigeria	37.8	1.0%	10.7	0.3%	NA	NA	-8.85%
Tanzania	37.3	1.0%	60.0	1.4%	33.1	0.8%	-1.75%
Groundnut							
World	1,385.0	100.0%	917.4	100.0%	785.5	100.0%	-2.95%
Sudan	105.5	7.6%	120.9	13.2%	17.1	2.2%	-6.60%
Niger	76.0	5.5%	76.3	8.4%	NA	NA	-29.65%
S. Africa	65.8	4.8%	56.8	6.2%	10.8	1.4%	-4.96%
Gambia	50.4	3.7%	34.0	3.7%	31.0	4.0%	-2.38%
USA	14.8	1.1%	163.4	17.7%	266.8	33.9%	12.54%
China	2.6	0.2%	32.1	3.5%	154.0	19.6%	13.50%
Argentina	NA	NA	1.2	0.1%	93.4	11.9%	46.37%
Cameroon	11.9	0.9%	9.4	1.0%	0.3	0.0%	-20.62%
Malawi	20.7	1.5%	30.8	3.4%	4.9	0.6%	-4.78%
Nigeria	554.7	40.0%	147.1	16.0%	NA	NA	-33.25%
Senegal	249.9	18.1%	17.2	1.9%	13.7	1.8%	-19.54%
Groundnut Cake							
World	1,426.6	102.6%	1,630.8	100.0%	591.1	100.0%	-4.07%
India	615.2	43.8%	845.0	51.9%	248.1	43.1%	-4.07%
Burma	152.3	11.0%	51.3	3.1%	4.2	0.7%	-14.85%
Argentina	127.3	9.2%	73.5	4.6%	30.6	5.5%	-5.33%
Brazil	101.5	7.4%	150.5	9.2%	28.9	5.4%	-5.37%
Gambia	2.9	0.2%	16.0	1.0%	13.6	2.6%	4.03%
USA	NA	NA	NA	NA	16.5	3.1%	1.80%
Malawi	1.0	0.1%	1.8	0.1%	1.5	0.3%	0.85%
Nigeria	84.0	6.1%	112.6	7.0%	NA	NA	-25.41%
Senegal	163.3	11.9%	201.9	12.2%	115.1	18.2%	-2.70%
Groundnut Oil							
World	354.9	100.0%	466.2	100.0%	383.8	100.0%	0.02%
Argentina	55.2	15.2%	53.0	11.5%	35.6	9.3%	1.95%
India	37.7	9.8%	0.1	0.0%	NA	NA	-14.16%
China	6.2	1.8%	19.3	4.2%	53.0	13.8%	6.44%
Brazil	5.6	1.5%	59.8	13.1%	54.3	14.7%	6.19%
Nigeria	60.1	16.9%	64.5	13.7%	NA	NA	-14.76%
Senegal	116.0	33.7%	126.4	26.2%	109.1	26.7%	-2.24%

Table 3
Export volumes, shares, and growth rates of major crops of MADIA countries and their major competitors (1961-86): average values for indicated periods (volume in thousand metric tons) (continued)

Crop	1961-63 Volume	1961-63 Share	1971-73 Volume	1971-73 Share	1983-85 Volume	1983-85 Share	1961-86 Growth Rate
Palm Oil							
World	601.7	100.0%	1,378.2	100.0%	4,513.7	100.0%	10.73%
Zaire	149.3	24.8%	87.0	6.5%	8.9	0.2%	-14.48%
Indonesia	109.1	18.1%	236.0	17.1%	435.2	9.5%	6.64%
Malaysia	106.4	17.7%	689.4	49.8%	3,029.1	67.6%	17.36%
Singapore	32.5	5.4%	210.5	15.3%	685.3	14.9%	14.52%
Cameroon	8.9	1.5%	3.4	0.3%	5.7	0.1%	-0.29%
Nigeria	138.5	22.9%	7.4	0.6%	NA	NA	-21.91%
Tea							
World	611.4	100.0%	778.0	100.0%	1,049.2	100.0%	2.46%
India	213.5	34.9%	196.9	25.3%	216.1	20.6%	0.16%
Sri Lanka	201.6	33.0%	203.2	26.1%	186.8	17.7%	-0.47%
China	30.2	5.0%	43.7	5.6%	135.7	12.9%	7.26%
Indonesia	29.6	4.9%	40.0	5.1%	81.5	7.7%	4.74%
Kenya	16.2	2.6%	50.3	6.5%	111.9	10.7%	8.96%
Malawi	12.0	2.0%	20.4	2.6%	36.8	3.5%	5.47%
Tanzania	3.8	0.6%	9.0	1.2%	13.4	1.3%	5.73%
Tobacco							
World	879.0	100.0%	1,161.5	100.0%	1,375.0	100.0%	2.17%
USA	223.1	25.4%	260.1	22.3%	247.1	18.0%	0.49%
Zimbabwe	76.9	8.7%	60.0	5.1%	90.7	6.6%	2.21%
Turkey	74.6	8.5%	105.8	9.1%	80.7	5.9%	0.76%
Bulgaria	68.7	7.8%	64.6	5.6%	61.7	4.5%	-0.57%
India	59.9	6.8%	72.7	6.2%	76.2	5.6%	1.99%
Greece	58.4	6.6%	59.8	5.2%	84.3	6.1%	0.59%
Brazil	45.0	5.1%	63.5	5.5%	187.6	13.6%	7.12%
Italy	15.6	1.8%	22.8	1.9%	87.3	6.3%	12.63%
Malawi	13.0	1.5%	27.5	2.4%	57.8	4.2%	6.83%

Note: In cases where data for certain years were not available, interpolations based on averages were made to allow calculation of growth rates.
NA = Not Available or inapplicable.
Source: World Bank Database (BESD).

cotton, and groundnuts. With regard to food production, Nigerian data are by far the most inconsistent among those available in any of the six countries, so that subjective judgment is needed to arrive at any conclusions. The production of nontraded food and root crops probably kept pace with the growth of rural population, but could not match the rapid rise in urban demand—leading to a sharp increase in food prices. As in Cameroon, the production of rice and maize appear to have done well. Nevertheless, there was a rapid increase in demand for traded food crops (rice and wheat), with increased imports of wheat, rice, and maize until 1986 (when a ban was imposed on food imports).

In Senegal, agricultural production suffered from considerable year-to-year weather-induced fluctuations. The declines in yields during 1963-75--particularly those of groundnuts, Senegal's major export—were, however, offset by a significant growth in yields from 1975-87.[20] The introduction of drought-resistant varieties of groundnuts helped arrest a serious decline in production that might have resulted in the early 1970s due to the higher frequency of droughts. Senegal lost market shares in groundnuts, groundnut cake, and groundnut oil. Moreover, it had the lowest self-sufficiency ratio of the MADIA countries—with food imports accounting for nearly 35 percent of aggregate calorie availability (compared to 10 percent or less for the rest of the MADIA sample). Stagnant domestic production and expanding internal demand pushed rice imports up sharply until they peaked at over 370,000 metric tons in 1984-85. As in Cameroon and Nigeria, maize production did well in Senegal (albeit from a small base).

Informal food markets were active in all three East African countries, but the government's share of purchases and sales of maize increased in Kenya and Malawi. In Tanzania, informal markets had become more active by the end of the 1970s; these existed both internally and across national borders due to the flexibility maize offered in exchange for consumer goods.[21]

Despite its lackluster performance in maize production, Malawi was a consistent net exporter of maize (except in 1980 and 1986)—but its food exports may have been due to a lack of effective demand at home, owing to skewed distribution of land and, thus, of agricultural income. The growth of food imports in Kenya may reflect exactly the contrary: a more dynamic internal demand for maize, stemming from more broad-based income growth. The growth of Tanzania's food imports and food aid receipts, in spite of its abundance of land and high levels of external assistance, emphasizes its poor policy environment.

The Luck Factor

Initial conditions at independence. Of the MADIA countries, Kenya and Nigeria were the best endowed, followed by Cameroon and Tanzania. Senegal and Malawi inherited by far the least favorable initial conditions.

In terms of per capita arable land (see Table 4), Tanzania and Cameroon have been the two land-surplus countries, although both have pockets of land pressure. Malawi and Kenya, on the other hand, had the most land pressure at independence. Kenya's population growth rate has been the highest among the six countries, and population pressure on land has increased significantly over time.

Combining considerations of per capita arable land with land quality leads to the conclusion that of the three East African countries, Malawi inherited the least favorable position. It has, like Tanzania, a greater proportion of land of medium potential than Kenya, which has a greater range in the quality of (high, medium, and low potential) land as well as in rainfall levels and patterns. Furthermore, Malawi has a unimodal rainfall regime compared to the bimodal patterns in Kenya and Tanzania.

Within the West African group, Senegal has inherited the least favorable position.[22] Cameroon and Nigeria, on the other hand, have enjoyed a much wider range of production possibilities, because they include not only the semiarid lands in the North (similar to, but better watered than, Senegal's), but also the Sudano-Sahelian areas in the Middle Belt and humid rainforest zones in the South.

Road densities need to be considered in relation to both total and arable land available in a country as well as in relation to patterns of population settlement. At independence, Malawi, Kenya, and Nigeria (in that order) had a higher density of roads per unit of total as well as arable land than did Senegal, Cameroon, or Tanzania (see Table 5). Malawi's favorable road network could not, however, offset the very high international transportation costs associated with its landlocked position. These costs have more than

Table 4
Per capita arable land (present and projected) in MADIA countries (in hectares per person)

	1965		1985		2000
	Total population	Rural population	Total population	Rural population	Total population
East Africa					
Kenya	1.34	0.86	0.73	0.60	0.42
Malawi	0.86	0.81	0.73	0.60	0.45
Tanzania	3.99	2.59	2.30	1.68	1.44
West Africa					
Cameroon	5.99	5.23	3.34	4.76	2.09
Nigeria	1.22	1.01	0.71	0.88	0.48
Senegal	2.67	2.38	1.62	1.80	1.04

Notes: Arable Land: Estimates and methodologies vary; for Kenya, which conducted a detailed agroclimatic analysis in conjunction with the German Agency for Technical Cooperation (GTZ), the estimate is 26%. In other countries, such as Cameroon and Nigeria, where extensive soil analysis is lacking, the estimates reach 75% of total land area.

Population: Figures projected from most recent census in country to year 1985 and 2000. Rural population calculated from government estimates of urban population, and percent urbanized in year 2000.

Sources: Jaetzold and Schmidt, Farm Management Handbook of Kenya: Natural Conditions and Farm Management Information, Government of Kenya, Ministry of Agriculture and German Agricultural Team of the German Agency for Technical Cooperation, 1982. Richard Mkandawiri and Chimimba Phiri, "Assessment of Land Transfer from Smallholders to Estates," Paper written for World Bank; United Republic of Tanzania, Statistical Abstract (1973-79), Bureau of Statistics, Ministry of Planning and Economic Affairs, 1983. Lele, Oyejide, et al. "Nigeria's Economic Development.", Republique du Cameroon, Bilan Diagnotisque du Secteur Agricole au Cameroun Ministère de l'Agriculture, 1980; Republique du Sénégal, "Situation Economique du Sénégal," Ministere du Développement Rural Direction Statistique, 1982; and "Sixième Plan Quadrienal du Développement Economique et Social, 1981-85," Ministère du Plan et de la Coopération, 1982. Uma Lele and Steven Stone, "Population Pressure, the Environment and Agricultural Intensification: Variations on the Boserup Hypothesis," MADIA Working Paper (Washington, DC: World Bank, 1989).

Table 5
Roads in MADIA countries at independence and at present

	Kenya	Malawi	Tanzania	Cameroon	Nigeria	Senegal
Roads at independence						
Paved (km)	2,013	413	1,300	1,231	11,053	1,658
Gravel Earth Roads	39,934	9,697	14,292	13,122	60,818	6,851
Total Classified	41,947	10,128	15,592	14,353	71,871	8,509
Population ('000)	9,404	3,854	11,586	5,332	54,278	3,839
Density (m person)	4.5	2.6	1.3	2.7	1.3	2.2
Total Land ('000 sq-km)	569.25	94.08	886.04	469.44	910.77	192
Arable Land	26.0%	37.0%	56.0%	75.0%	75.0%	53.0%
Density to Total Land (km 100 sq-km)	7.4	10.8	1.8	3.1	7.9	4.4
Density to Arable Land (km 100 sq-km)	28.3	29.1	3.1	4.1	10.5	8.4
Roads at present						
Paved (km)	7,944	2,176	3,194	2,922	24,900	3,688
Gravel Earth Roads	56,640	9,253	78,701	46,599	103,274	10,280
Total Classified	64,584	11,429	81,895	49,521	128,174	13,968
Population ('000)	18,791	7,044	21,497	10,555	93,402	6,036
Density (m person)	3.4	1.6	3.8	4.7	1.2	2.3
Total Land ('000 sq-km)	569.25	94.08	886.04	469.44	910.77	192.00
Arable Land	26.0%	37.0%	56.0%	75.0%	75.0%	53.0%
Density to Total Land(km 100 sq-km)	11.3	12.1	9.2	10.5	14.1	7.3
Density to Arable Land(km 100 sq-km)	43.6	32.8	16.5	14.1	18.7	13.7

Source: International Road Federation, "World Road Statistics" (Washington, DC: International Road Federation 1969, 1985); Government of Malawi, "Inventory of Designated Roads in Malawi," 1984, 1985; Uma Lele, Vishva Bindlish, and Juan Gaviria, "Rural Roads and Agricultural Development in Nigeria," MADIA Working Paper (Washington, DC: World Bank, 1989); Uma Lele and Steve Stone, "Population Pressure, the Environment, and Agricultural Intensification: Variations on the Boserup Hypothesis," MADIA Working Paper (Washington, DC: World Bank, 1989); World Bank Database (BESD); Louis Mvele, "Cooperation Nord-Sud Echecs et Succes: Les Cas des Infrastructures de Transport au Cameroon" (Geneve: Institut Universaire de Hautes Etudes Internationales, 1984).

doubled since the closure of its traditional shipping outlets in Mozambique in the early 1980s. Kenya had the largest European settlement in Africa and, consequently, a relatively good transport infrastructure—including a railway connecting the White Highlands to the port of Mombasa. Nigeria's road network supported a thriving smallholder export agriculture at independence. The Groundnut Basin in Senegal benefited from the French investment in an effective road and rail network to facilitate the exchange of smallholder groundnut production and Indo-Chinese rice. In contrast, Cameroon and Tanzania—the two land-surplus countries—had relatively poor physical infrastructure but enjoyed good ports.

At present, Kenya, Malawi, and Nigeria still have higher road densities than Cameroon, Tanzania, or Senegal. While Nigeria now has the highest density of roads per unit of *total* land, the density of roads per unit of arable land is far higher in Kenya and Malawi (in that order) than in any of the other countries.

In all six countries, social indicators were very poor at independence (see Table 6). Kenya had the most favorable ratios of life expectancy, infant mortality, and population per physician. Consistent with its lowest per capita income of the six MADIA countries in 1965, Malawi had the lowest life expectancy, the highest child mortality, and the highest population per physician. Over time, these indicators have improved less in Malawi in comparison to the other countries. The percentage of population with access to safe water in Malawi, however, remains quite high. While Tanzania had poorer indicators than Kenya, it made major strides in the 1970s—particularly in lowering child mortality and improving access to safe water. The single-minded pursuit of equity in the absence of growth, however, made it difficult to sustain these gains.

In West Africa, Nigeria's indicators of life expectancy, infant mortality, and access to physicians and safe water improved substantially after the oil boom of the 1970s. At independence Senegal had the highest proportion of population with access to safe water, but the improvement in its social indicators over time has, as in Malawi, been slower in comparison with the other MADIA countries.

Cameroon had by far the highest primary school enrollment in 1965. Since then, Nigeria, Kenya, and Tanzania have made considerable strides in expanding primary education. Senegal—the center of the former French empire in West Africa—had the highest level of secondary school attendees in 1965. Nigeria, Cameroon, and Kenya have made the best progress in improving access to secondary school education. Tanzania and Malawi, on the other hand, continue to have extremely low rates of secondary school enrollment.

External shocks. Nigeria and Cameroon experienced relatively favorable external shocks in comparison to the other countries, due primarily to the dominance of oil in their economies.[c] The recent decline in oil prices has, however, had an adverse impact on both countries. In Senegal, while world prices of phosphates played a positive role, other external shocks relating to agriculture turned out to be unfavorable. Its terms of trade suffered a steep decline over 1967-69 due to the removal of French protection for its groundnut exports; they declined again over 1974-76 and 1978-80 but have remained stable since.

Table 6
Basic social indicators in the MADIA countries

Item	Year	East Africa: Kenya	Malawi	Tanzania	West Africa: Cameroon	Nigeria	Senegal
Population (millions)	1965	9.5	3.9	11.7	6.1[b]	48.7	3.4
	1986	21	7	23	11	103	7
Population Growth Rate	1965-80	3.6%	2.9%	3.3%	2.7%	2.5%	2.5%
	1980-86	4.1%	3.2%	3.5%	3.2%	3.3%	2.9%
GNP Per Capita (US$)	1965	103	63	76	168	49	241
	1987	340	160	220[c]	960	370[a]	510
Life Expectancy (years)	1965	45	39	43	46	42	41
	1986	57	45	53	56	51	47
Infant Mortality Rate (per thousand)	1965	112	199	138	143	177	171
	1986	83	164	98	85	105	124
Population per Physician	1965	12,820	46,900	21,700	26,680	44,230	21,100
	1981	10,140	53,000	19,810	13,990	12,000	14,200
Percentage of Age-Group Enrolled in Primary School	1965	54%	44%	32%	94%	32%	40%
	1985	94%	62%	72%	107%	92%	55%
Percentage of Age-Group Enrolled in Secondary School	1965	4%	2%	2%	5%	5%	7%
	1985	20%	4%	3%	23%	29%	13%
Percentage of Population with Access to Safe Water	1973	15%	33%	13%	26%	15%	37%
	1980	26%	41%	34%	53%	36%	42%
Average Annual Growth Rate of Urbanization	1965-80	9.0%	7.8%	8.7%	8.1%	4.8%	4.1%
	1980-85	6.3%	NA	8.3%	7.0%	5.2%	4.0%

Source: World Bank, World Development Report 1985, 1986, 1987, 1988. World Bank, Social Indicators of Development, 1986. Per Capita GNP for 1965 calculated from IMF, *International Financial Statistics Yearbook*, 1987. Republique du Cameroun, "Enquete Nationale sur la Nutrition" (Washington, DC: Agency for International Development, 1978).

Notes: [a] As a result of the recent devaluation, per capita GNP in Nigeria was approximately four times lower than amount shown above.
[b] for 1968.
[c] Use of overvalued official exchange rate in the case of Tanzania overstates its achievements in per capita income growth relative to other countries.

In contrast, the East African countries—dependent mainly on agricultural exports—suffered substantial losses from adverse movements in their terms of trade (see Figure 5). Kenya and Malawi (in that order) suffered the greatest losses from external shocks.

All the MADIA countries (but Nigeria) were forced to contract imports in order to survive the external disequilibria. Import compression was most severe in Malawi, Senegal, Tanzania, and Kenya, in that order. It continued in Cameroon up to 1985, whereas in Nigeria import levels actually increased (albeit at a declining rate since 1978).

Higher interest payments on foreign loans appear to have had a significant adverse effect on the external position of all countries but Tanzania. The latter relied more on assistance from official sources, and did not significantly alter its debt profile even in the 1980s. The other five countries increased the proportion of debts owed to private sources and subject to variable interest rates. Cameroon incurred the largest repayments (as a percentage of GDP), followed by Senegal, Malawi, Kenya, and Nigeria.

Other shocks that are difficult to systematically measure have also played a significant role. Kenya and Tanzania, for example, dissolved the East African Community and closed their common borders in 1977. Although illegal trade in primarily consumption goods continued between the two countries, Tanzania's agricultural trade (which had relied on sales through Kenyan-based traders and export markets) and agricultural research (which had relied heavily on the Community) suffered. Tanzania also paid a heavy price for its war with Uganda in 1979.

While all the countries suffered from periodic droughts, climatic irregularities in Senegal (together with the withdrawal of French export price support for its major crop, groundnuts) have had a particularly adverse effect on its agriculture. Malawi, in turn, suffered from external political and logistical constraints. The closure of Mozambique's ports raised not only the costs and the insecurity of transport, but disturbances in Mozambique also increased the number of refugees entering Malawi (numbering 500,000 or about 6 percent of its total population by mid-1988).[23]

Nigeria had by far the most serious internal political difficulties. The civil war in the late 1960s was followed by six changes of government (including five coups) as well as partitions of states. This created an unpredictable political and administrative environment, leading to unsettling changes in policy initiatives.[24]

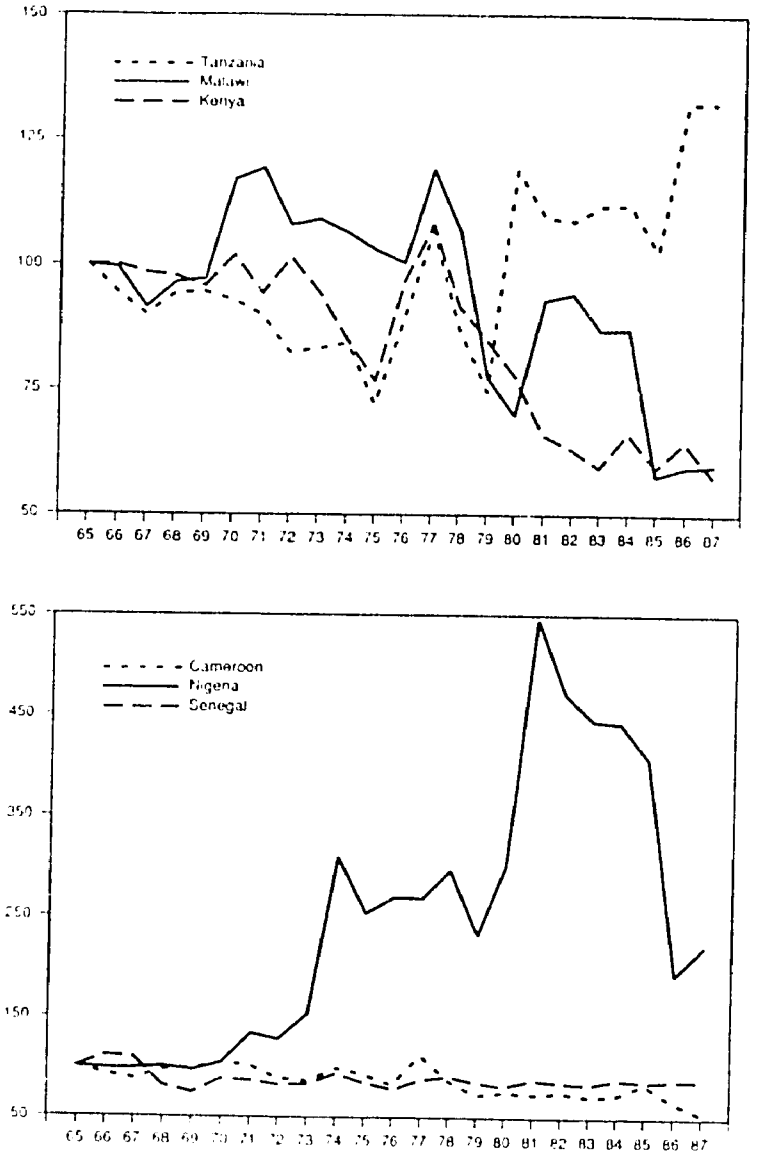
Macroeconomic Policies

The countries whose agricultural sectors have grown the fastest have also been the best performers in terms of GDP growth (see Table 7). Cameroon, Kenya, and Malawi, in that order, have had the highest growth rates of GDP, per capita GNP, and agricultural output during 1960-87. Clearly, favorable luck factors such as endowments or external shocks do not necessarily coincide with better economic growth. As the following discussion will demonstrate, the macroeconomic and sectoral policies of the MADIA countries have been critically important in explaining their performance.

Development strategies and diversification out of agriculture. The share of agriculture in GDP, employment, and exports in West Africa has traditionally been smaller (and the level of urbanization greater) than in East Africa (see Table 8). While all six countries have followed strategies of diversification out of agriculture, the attempted degree of

Figure 5

Barter terms-of-trade indices for MADIA countries, 1965-87 (base year = 1965)



Source: Seka, Gbetibouo, and Lele 1989

diversification has been more moderate in Kenya, Malawi, and Cameroon in comparison to the others.

The case of Tanzania represents the most extreme form of diversification. The government's policy response to export pessimism was a strong capital-intensive import-substituting industrialization effort. It involved the establishment of large-scale public sector industries such as fertilizer, pulp, and paper, as well as the development of agroprocessing to increase domestic value-added in export agriculture. Both these strands of Tanzania's industrial program have been supported by donor assistance to a much greater extent than were industrial programs in other MADIA countries.[26] In contrast, Kenya successfully developed labor-intensive, small-scale industry and further broadened employment opportunities.

In Nigeria, as in Tanzania, diversification out of the export crop sector involved a substantial expansion of the industry and construction sectors. Similarly, in Senegal the process involved the development of agroprocessing and fertilizer industries.

Table 7
Comparative macroeconomic performance of MADIA countries

	Kenya	Tanzania	Malawi	Cameroon	Nigeria	Senegal
Average growth rates, 1960-87:						
GDP	5.8	3.3	4.4	5.9	3.1	2.2
Per Capita GNP	2.1	0.2	1.5	2.8	-0.2	-0.9
Agriculture	4.0	1.4	2.8	4.4	0.6	1.2
Manufacturing	8.1	2.7	4.3	8.7	10.6	3.9
Mining	3.8	-4.0	29.8	8.4		
Savings	10.5	-1.5	12.8	17.9	2.3	-1.7
Investment	4.5	5.4	5.0	10.0	6.5	1.9
Exports	3.4	1.2	4.9	6.9	3.1	2.7
Imports	1.1	6.2	1.9	5.1	7.8	2.8
Public Consumption	7.3	14.9	4.9	5.7	8.5	2.8
Inflation	8.3	12.0	8.1	7.7	11.6	7.4
Population	3.72	3.1	2.9	3.1	3.3	3.1
1967-1973						
Growth Rate of Real GDP	8.5	5.2	5.2	2.4	4.9	2.2
Growth Rate of Population	3.5	2.7	2.5	2.4	2.5	2.4
Growth Rate of GDP per capita	5.0	2.5	2.7	0.0	2.3	-0.1
Ratio of Investment to GDP	22.3	20.8	20.0	15.3	12.7	13.8
Ratio of Savings to GDP	20.8	18.2	8.2	13.0	11.5	9.7
Ratio of Net Exports to GDP	-1.5	-2.6	-11.8	-2.2	-1.2	-4.1
Ratio of Current Account Deficit to GDP	-3.0	-2.9	-11.7	-7.5	-4.1	-1.4
Ratio of Debt to Exports	61.4	120.6	148.7	61.1	29.0	39.0
Ratio of Debt Service to Exports	4.7	5.6	7.1	4.8	2.8	3.8
Ratio of Fiscal Deficit to GDP	-3.4	-5.0	-2.4	-2.1	-0.9	
Rate of Inflation (CPI)	4.2	8.5	12.5	3.8	5.2	3.6
Rate of Inflation (GDP Deflator)	3.3	6.2	5.8	7.6	7.7	2.7
Growth Rate of Real Output in Agriculture	5.4	2.3	2.8	4.6	1.9	5.8
Growth Rate of Real Output in Manufacturing	14.2	7.8	5.5	6.5	13.9	6.9
Growth Rate of Real Output in Mining	12.8	-6.2	29.4	28.9	2.5	
Growth Rate of Exports	3.1	3.6	5.9	3.8	16.6	2.2
Growth Rate of Imports	4.0	3.6	1.4	4.0	12.5	1.2
Central Bank Borrowing as % of GDP	1.0	3.6	1.4	0.5	3.3	0.0
Rural Population as % of Total Population	89.7	92.8	93.6	78.7	83.6	74.7
1974-1978						
Growth Rate of Real GDP	4.7	2.5	6.6	7.5	2.9	2.3
Growth Rate of Population	3.6	3.4	3.0	3.0	2.5	2.6
Growth Rate of GDP per capita	1.1	-0.9	3.6	4.5	0.4	-0.3
Ratio of Investment to GDP	23.5	20.6	29.6	19.8	23.0	18.3
Ratio of Savings to GDP	20.0	11.0	18.3	17.4	25.4	10.5
Ratio of Net Exports to GDP	-3.5	-9.6	-11.3	-2.4	2.5	-7.8
Ratio of Current Account Deficit to GDP	-6.2	-9.7	-8.9	-9.8	-0.3	-5.5
Ratio of Debt to Exports	74.6	187.1	181.7	72.1	11.7	54.3
Ratio of Debt Service to Exports	6.4	6.6	12.5	5.9	1.7	7.7
Ratio of Fiscal Deficit to GDP	-3.6	-7.9	-0.9	-1.2	0.6	-1.1
Rate of Inflation (CPI)	16.0	15.1	8.5	13.6	21.9	12.7
Rate of Inflation (GDP Deflator)	14.5	14.7	10.2	11.8	21.6	9.9
Growth Rate of Real Output in Agriculture	4.1	4.7	5.8	2.5	-0.7	2.3
Growth Rate of Real Output in Manufacturing	6.6	4.7	6.7	9.1	12.7	1.5
Growth Rate of Real Output in Mining	6.5	-2.7	24.1	3.9	2.5	
Growth Rate of Exports	2.0	-6.8	-0.7	7.9	3.5	10.0
Growth Rate of Imports	7.8	2.8	6.1	7.1	28.6	11.3
Central Bank Borrowing as % of GDP	3.6	8.2	2.9	2.3	3.7	0.9
Rural Population as % of Total Population	87.4	90.1	91.6	70.7	81.2	68.0

Table 7
Comparative macroeconomic performance of MADIA countries (continued)

	Kenya	Tanzania	Malawi	Cameroon	Nigeria	Senegal
1979-1981						
Growth Rate of Real GDP	4.2	2.1	2.0	13.9	0.9	1.9
Growth Rate of Population	4.0	3.2	2.6	3.2	2.8	2.9
Growth Rate of GDP per capita	0.2	-1.1	-0.6	10.8	-1.9	-1.0
Ratio of Investment to GDP	27.0	22.2	27.0	21.7	20.8	15.4
Ratio of Savings to GDP	18.2	10.8	13.2	17.5	23.1	-0.3
Ratio of Net Exports to GDP	-8.8	-11.4	-13.8	-4.3	2.3	-15.8
Ratio of Current Account Deficit to GDP	-10.5	-11.7	-12.7	-12.8	-1.4	-14.9
Ratio of Debt to Exports	120.2	261.1	211.4	101.5	19.5	136.8
Ratio of Debt Service to Exports	14.3	9.4	24.8	9.3	2.6	17.5
Ratio of Fiscal Deficit to GDP	-4.6	-10.1	-1.0	-3.3	-13.9	-2.2
Rate of Inflation (CPI)	11.2	23.2	4.0	8.9	13.1	8.1
Rate of Inflation (GDP Deflator)	9.0	21.9	9.1	8.4	14.2	8.8
Growth Rate of Real Output in Agriculture	1.5	-1.0	-3.9	12.1	-2.7	1.1
Growth Rate of Real Output in Manufacturing	5.5	-10.2	2.8	15.2	22.6	8.2
Growth Rate of Real Output in Mining	-8.3	2.7	185.2	-7.4	4.4	
Growth Rate of Exports	-1.3	7.1	11.9	22.1	-5.3	5.7
Growth Rate of Imports	-9.9	14.3	-4.6	12.2	5.3	7.5
Central Bank Borrowing as % of GDP	6.0	18.6	9.3	1.5	13.9	5.9
Rural Population as % of Total Population	85.8	88.2	90.5	65.5	79.6	66.6
1982-1984						
Growth Rate of Real GDP	3.7	0.6	3.5	5.9	-4.7	4.4
Growth Rate of Population	4.1	3.5	3.8	3.2	3.3	2.9
Growth Rate of GDP per capita	-0.3	-2.9	-0.3	2.7	-8.0	1.6
Ratio of Investment to GDP	21.2	16.4	21.9	22.8	11.9	15.8
Ratio of Savings to GDP	18.3	9.3	14.9	28.0	9.3	2.4
Ratio of Net Exports to GDP	-2.9	-7.1	-7.0	5.3	-2.6	-13.4
Ratio of Current Account Deficit to GDP	-4.7	-7.4	-3.0	-1.2	-4.9	-12.8
Ratio of Debt to Exports	135.2	513.1	253.2	98.5	92.4	218.5
Ratio of Debt Service to Exports	18.2	12.1	22.7	12.4	17.9	9.5
Ratio of Fiscal Deficit to GDP	-3.9	-3.9	-0.7	-0.6	-10.5	-9.4
Rate of Inflation (CPI)	14.0	30.6	5.4	13.8	23.5	13.6
Rate of Inflation (GDP Deflator)	9.6	12.9	9.4	12.3	11.3	10.4
Growth Rate of Real Output in Agriculture	4.4	1.8	5.8	1.7	-1.1	3.6
Growth Rate of Real Output in Manufacturing	3.0	-9.9	3.4	13.3	-8.1	5.5
Growth Rate of Real Output in Mining	0.0	-2.7	22.4	-1.7	-0.8	
Growth Rate of Exports	2.9	-16.7	-0.9	16.1	-3.5	2.4
Growth Rate of Imports	-6.4	-8.4	-0.4	-3.6	-19.5	-3.3
Central Bank Borrowing as % of GDP	10.4	21.9	19.3	1.8	20.3	13.8
Rural Population as % of Total Population	82.0	85.0	88.0	59.0	70.0	65.0
1985-1987						
Growth Rate of Real GDP	5.1	4.3	2.8	9.0	2.5	4.2
Growth Rate of Population	4.2	3.6	3.4	3.4	3.4	3.0
Growth Rate of GDP per capita	0.9	0.7	-0.6	5.7	-0.9	1.2
Ratio of Investment to GDP	24.0	17.2	13.5	19.8	8.9	13.7
Ratio of Savings to GDP	21.7	4.8	11.6	25.3	9.7	3.6
Ratio of Net Exports to GDP	-2.3	-12.4	-1.9	5.5	0.7	-10.1
Ratio of Current Account Deficit to GDP	-6.0	-12.7	-6.5	-0.2	-1.0	-13.4
Ratio of Debt to Exports	163.0	902.4	311.3	77.2	202.2	244.8
Ratio of Debt Service to Exports	21.3	15.3	34.6	9.8	27.0	10.9
Ratio of Fiscal Deficit to GDP	-5.8	-4.3	-7.0	0.8	-1.6	
Rate of Inflation (CPI)	7.4	33.1	18.8	2.2	4.4	9.7
Rate of Inflation (GDP Deflator)	9.8	29.4	16.0	2.9	10.3	8.4
Growth Rate of Real Output in Agriculture	4.3	4.5	2.3	2.4	4.9	8.9
Growth Rate of Real Output in Manufacturing	5.0	-5.3	1.6	0.9	5.5	1.9
Growth Rate of Real Output in Mining	3.3	-4.6	1.3	-2.6	7.3	
Growth Rate of Exports	4.5	6.0	9.2	6.6	-1.1	0.5
Growth Rate of Imports	5.6	13.8	-5.9	26.9	-22.6	-0.7
Central Bank Borrowing as % of GDP	10.4	22.1	16.7	2.1	18.7	10.0
Rural Population as % of Total Population	80.0	86.0	58.0	70.0	64.0	

Note: Average growth rates for the period 1960-87 are calculated by using the least squares method. They are all significant at the 5% level.
Source: World Bank Database (BESD), World Bank Data File, 1989; IMF, *International Financial Statistics Yearbook, 1987* for population figures.

Table 8
Comparative macroeconomic structure of MADIA countries

Country	Percentage share of agriculture in Exports 1967-73	Exports 1985	Employment 1965	Employment 1985	GDP 1967-73	GDP 1985
East Africa						
Kenya	75%	57%	84%	78%	34%	31%
Malawi	97%	94%	91%	83%	44%	38%
Tanzania	78%	79%	88%	86%	41%	58%
West Africa						
Cameroon	81%	65%	85%	70%	31%	21%
Nigeria	38%	4%	67%	68%	41%	36%
Senegal	71%	46%	82%	81%	24%	19%

	Percentage of GDP, 1960-87				
	Agriculture	Mining	Manufacturing	Infrastructure	Other services
East Africa					
Kenya	34.9	0.3	11.7	7.2	45.9
Malawi	42.6	10.1	5.8	41.5	
Tanzania	47.3	1.4	9.1	4.5	37.7
West Africa					
Cameroon	29.2	6.1	10.1	8.8	45.8
Nigeria	41.5	12.3	7.0	4.2	35.0
Senegal	23.6	1.5	15.7	6.3	52.9

	Savings	Investment	Exports	Imports	Public Consumption
East Africa					
Kenya	19.6	21.7	29.1	31.2	17.4
Malawi	9.1	20.0	24.3	35.2	16.4
Tanzania	13.5	19.2	19.1	24.9	19.9
West Africa					
Cameroon	18.0	18.8	24.4	25.1	9.[illegible]
Nigeria	15.0	15.1	15.2	15.3	9.0
Senegal	11.3	15.7	32.5	36.9	18.3

Source: World Bank Data File, 1989.

Following a Kuznetsian pattern of growth, the share of agriculture in GDP should decline over time. This is evident in the case of Kenya and Malawi in East Africa. Paradoxically, in Tanzania—where industrialization had been given the primary emphasis—the share of agriculture in both GDP and exports had increased. In West Africa, the share of agriculture fell in all three countries—falling most steeply in Cameroon.

The growth of agricultural output in Cameroon, Kenya, and Malawi was accompanied by higher growth in the manufacturing sector than in the other countries (with the exception of Nigeria). The countries that relied on their comparative advantage and moved least rapidly to diversify their economies performed better and achieved rapid diversification.

Public expenditure patterns. There is considerable variation in the quality of available information on public expenditures in the six countries. In general, among the anglophone countries, Kenya and Malawi possess better data bases on expenditures than Nigeria or Tanzania—reflecting their better economic management. In the francophone countries, on the other hand, the capacity for systematic collection and analysis of data has been relatively weak.

In East Africa, Tanzania had a higher overall share of government expenditures in GDP at the end of the 1970s than Kenya and Malawi, despite having a lower share at the beginning of the decade.[27] Tanzanian programs focused heavily on industrial promotion, welfare services, and defense but neglected agriculture, and transport and communication infrastructure. Kenya and Malawi had smaller expenditure programs but a more even intersectoral balance of expenditures. Furthermore, the share of the *recurrent* budget accruing to agriculture declined more steeply in Tanzania in the 1970s than in the other two countries.

In West Africa, the quality of public expenditures in Cameroon was superior to that of either Nigeria or Senegal.[28] While the oil boom inflated expenditures in the urban and construction sectors, Nigeria (unlike Tanzania) did not neglect agriculture in public expenditure allocations; for example, its budgeted *capital* expenditures on agriculture in 1981-85 were 66 times higher in absolute terms than actual expenditures on agriculture in 1962-68. Caution needs to be exercised in taking the relative share of agriculture vis-a-vis other sectors as an indication of commitment to agriculture without regard to expenditure quality. In Nigeria, the poor quality of government expenditures was reflected in the lack of a well defined smallholder strategy—a fundamental constraint in raising agricultural production even though price incentives for food crop production were favorable.[29] As in the other MADIA countries, the lack of *recurrent*

expenditures has been another fundamental constraint for the development of smallholder agriculture as well as for other sectors of the economy.

Tanzania and Nigeria had the highest growth rates of public consumption as well as money stock among the six countries. Both these factors contributed to higher rates of inflation and hence higher rates of currency appreciation in the two countries. Real appreciation, moreover, hindered the production of tradables (including agricultural exports).

Implicit and explicit taxation of agriculture. Figure 6 shows the behavior of the exchange rates of the six countries. Tanzania and Nigeria had the most acutely overvalued exchange rates, which led to a high degree of implicit taxation of export agriculture. In Tanzania, the coffee boom in the mid-1970s combined this implicit taxation with a high level of explicit taxation of coffee, the country's chief export. In Nigeria, producer price subsidies to export crop cultivators in the 1970s could not adequately offset the degree of currency overvaluation. Malawi and Kenya, in contrast, regularly adjusted their exchange rates and thus avoided taxing their agricultural sectors. Cameroon and Senegal—both members of the West African Monetary Union—also followed a relatively flexible exchange rate policy.

Only Kenya has refrained from taxing its major export crops—tea and coffee—whose prices continue to be determined by the international market. It has avoided mobilizing resources through the regressive taxation of smallholders, and has offered them the same price incentives as estate producers. In Malawi, rights to grow burley and flue-cured tobacco—the country's major exports—have been restricted to estates. Smallholders in Malawi have been required to sell their output at fixed prices to ADMARC, the single agricultural marketing parastatal operating in Malawi. The estates, in contrast, have been allowed to sell their output at open auctions. Smallholders have typically received only a third of the price that ADMARC derived from auctioning their output. Even if the higher marketing costs for smallholders are taken into account, the differential reflects the taxation of small farmers at rates of over 50 percent (see Tables 9, 10, 11, and 12).

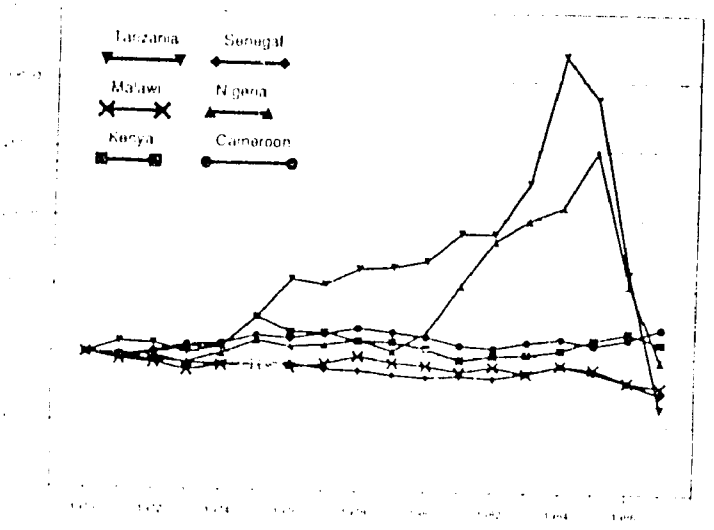
In his study on French assistance, Freud points out that under a system of French protection since 1929, groundnut producers in Senegal received up to 50 percent of the French import price (which was itself about 25 percent above the world price) of groundnuts. These price premiums guaranteed by the French were removed when the Yaounde Convention was signed in 1967. The ratio of producer to international prices remained significantly below 0.5 throughout the 1970s.

An examination of export crop prices relative to food crop prices (see Tables 13 and 14) shows that only in Kenya have prices of export crops assured favorable returns to land and labor vis-a-vis the chief food crop, maize. The higher returns to coffee and tea producers in Kenya reflect the higher quality of Kenya's arabica coffee and smallholder tea.

With the exception of Kenya (and the case of estate agriculture in Malawi), the producer price structure in the MADIA countries shifted over time in favor of food crop production—regardless of whether food markets have been controlled, as in East Africa, or have been free, as in West Africa. Since the mid-1980s, some change in this general trend has occurred due to the introduction of structural adjustment programs. The correction of exchange rate and producer price distortions in Nigeria, Tanzania, Senegal, and Malawi has induced some shifts in resources from food crops to export crops.

Figure 6

Purchasing power parity exchange rate indices for MADIA countries, 1970-87 (base year 1970)



Note: Real exchange rates computed on the assumption of purchasing-power-parity. The rates are defined such that appreciation is reflected by an upward trend, and depreciation by a downward trend.

Source: Seka 1987

In general, food prices in West Africa tended to be substantially higher than those in East Africa and far above international levels—prices of maize, for example, typically have been twice as high as those prevailing in East Africa. In fact, Kenya's coffee-maize producer price ratios were well over twice as high as in Tanzania—and nearly four times as favorable as those in Cameroon. In general, the ratio of export crop prices to maize prices in Kenya have been substantially higher than comparable ratios in the other countries (which is not surprising in view of the taxation of coffee in Tanzania and Cameroon, of smallholder tobacco in Malawi, and of cocoa in Nigeria and Cameroon).

In Senegal, groundnut/millet price ratios had earlier favored groundnuts, but fell in the period under review and remained close to unity throughout the 1970s. Groundnut prices also moved unfavorably vis-a-vis producer prices of rice as import substitution of rice became the primary focus of Senegal's food self-sufficiency strategy.

Sectoral Policies

Relative roles of price and nonprice factors. Yields of coffee, tea, and maize have been two to four times as high in Kenya as in Cameroon, Tanzania, or Malawi (see Table 15). Even after taking into account the additional costs of realizing these yields, the relative advantage of producing coffee rather than maize in Kenya has been at least twice as great (as in other countries) as the relative producer price differences (reviewed earlier) suggested.

Smallholders in Kenya—in comparison to their counterparts in Tanzania, Malawi, and Cameroon—have had relatively easy access to research, extension, credit, and inputs, as well as to marketing, handling, and processing services. Tea and coffee research traditionally has been of high quality. The smallholder coffee cooperatives and the Kenya Tea Development Authority (a semiautonomous public

Table 9
East Africa: Ratios of producer prices to international prices, 1970-86 (converted at nominal exchange rates)

Year	Kenya		Malawi			Tanzania		
	Smallholder		Smallholder	Estate		Smallholder		
	Coffee	Tea	Dark-fired	Burley	Flue-cured	Tobacco	Cotton	Coffee
1970	0.91	0.60	0.22	0.43	0.57	0.43	0.72	
1971	0.90	0.67	0.25	0.39	0.68	0.50	0.61	
1972	0.98	0.63	0.23	0.40	0.63	0.46	0.57	0.57
1973	0.96	0.60	0.22	0.54	0.86	0.44	0.35	0.43
1974	0.97	0.55	0.23	0.62	0.84	0.42	0.32	0.43
1975	1.01	0.63	0.22	0.47	0.66	0.47	0.51	0.36
1976	0.85	0.57	0.21	0.48	0.70	0.40	0.41	0.30
1977	0.92	0.70	0.26	0.60	0.76	0.42	0.45	0.35
1978	0.94	0.64	0.26	0.50	0.74	0.47	0.55	0.39
1979	0.93	0.66	0.24	0.45	0.65	0.37	0.51	0.29
1980	0.93	0.76	0.23	0.46	0.40	0.35	0.52	0.41
1981	0.84	0.62	0.19	0.73	0.56	0.33	0.61	0.53
1982	0.83	0.56	0.24	0.51	0.50	0.30	0.73	0.52
1983	0.90	0.98	0.23	0.27	0.39	0.38	0.67	0.47
1984	0.80	0.66	0.25	0.30	0.38	0.27	0.65	0.47
1985	0.88	0.76	0.21	0.26	0.34	0.36	1.07	0.53
1986	0.79	0.69	0.22	0.43	0.45	0.32	1.11	0.33

Source: See Below.

Table 10
East Africa: Ratios of producer prices to international prices, 1970-86 (converted at purchasing power parity exchange rates)

Year	Kenya		Malawi			Tanzania		
	Smallholder		Smallholder	Estate		Smallholder		
	Coffee	Tea	Dark-fired	Burley	Flue-cured	Tobacco	Cotton	Coffee
1970	0.85	0.56	0.22	0.42	0.56	0.41	0.68	
1971	0.88	0.66	0.24	0.39	0.66	0.49	0.59	
1972	0.98	0.63	0.23	0.40	0.63	0.46	0.57	0.57
1973	1.02	0.64	0.24	0.59	0.95	0.45	0.35	0.44
1974	1.01	0.57	0.25	0.68	0.92	0.40	0.31	0.41
1975	1.02	0.64	0.25	0.52	0.73	0.41	0.45	0.32
1976	0.89	0.59	0.23	0.53	0.76	0.37	0.39	0.29
1977	0.94	0.71	0.30	0.70	0.88	0.40	0.43	0.33
1978	0.90	0.61	0.30	0.58	0.86	0.44	0.52	0.37
1979	0.92	0.65	0.29	0.53	0.77	0.37	0.51	0.29
1980	0.98	0.75	0.27	0.54	0.46	0.31	0.47	0.37
1981	0.86	0.64	0.21	0.81	0.62	0.23	0.42	0.36
1982	0.82	0.56	0.28	0.59	0.59	0.16	0.39	0.28
1983	0.94	1.02	0.26	0.31	0.44	0.20	0.35	0.24
1984	0.77	0.64	0.26	0.31	0.40	0.13	0.32	0.23
1985	0.87	0.74	0.22	0.27	0.36	0.15	0.46	0.23
1986	0.96	0.85	0.25	0.50	0.52	0.25	0.88	0.26

Note: Seed cotton producer prices converted to lint cotton equivalent using 34% conversion rate. Green leaf producer prices converted to made tea equivalent using 22% conversion rate. World Prices are: Coffee "Other Mild Arabica"; Tea "Average Auction (London)"; Tobacco "United States All Markets"; Cotton "Egypt (Liverpool)."

Source: IMF, *International Financial Statistics Yearbook*, various years; Kenya Ministry of Agriculture; Government of Malawi, Economic Report; FAO/World Bank, "Tanzania Agricultural Sector Review Mission," Annexes. Cooperation Programme Investment Center, Rome, FAO, 1987.

sector enterprise) are recognized to be among the most effective institutions for channeling export crop services to smallholders. Their clientele includes an unusually high proportion of politically conscious and vigilant farmers, reflecting the more extensive grassroots development of Kenya's commercial and political institutions. Although it is difficult to quantify the relative importance of these nonprice factors as determinants of the efficiency and profitability of particular crop-growing activities, they have critically influenced the willingness of smallholders to apply their labor in ways that enhance production growth.

Other examples—such as cotton in Cameroon and cocoa in Nigeria—support the observation that price levels are not necessarily the most important determinants of crop expansion, and that technological and institutional development can actually counter adverse price effects. Cotton producer prices, for example, were substantially lower in Cameroon than in Kenya or Nigeria throughout the 1970s—not only in nominal terms but also when converted at purcasing power parity rates (see Figures 7 and 8). Yet at the end of the decade yields in Cameroon were nevertheless four to eight times as high as in those countries. Returns to cotton production in Cameroon, as a result, have been significantly higher.[10]

Not surprisingly, the technological and organizational factors accounting for the success of cotton in Cameroon (as well as in Senegal) have been similar to those responsible for the growth of tea and coffee production in Kenya. Although the *Société de Développement du Coton du Cameroun* (SODECOTON) is a paternalistic, public sector agency in

Table 11
West Africa: Ratios of producer prices to international prices, 1970-86 (converted at nominal exchange rates)

Year	Cameroon				Nigeria		Senegal	
	Arabica coffee	Robusta coffee	Cocoa	Cotton	Cocoa	Palm kernel	Groundnuts	Cotton
1970	0.55	0.49	0.45	0.50	0.61	0.51	0.27	0.16
1971	0.60	0.48	0.60	0.44	0.77	0.59	0.27	0.14
1972	0.62	0.50	0.56	0.45	0.84	0.80	0.36	0.15
1973	0.65	0.53	0.40	0.37	0.66	0.76	0.26	0.10
1974	0.54	0.43	0.32	0.37	0.67	0.51	0.17	0.09
1975	0.76	0.50	0.49	0.50	0.86	1.18	0.45	0.14
1976	0.41	0.29	0.31	0.40	0.51	1.04	0.41	0.10
1977	0.26	0.21	0.24	0.50	0.42	0.71	0.31	0.12
1978	0.44	0.38	0.34	0.53	0.48	0.65	0.29	0.13
1979	0.43	0.40	0.41	0.57	0.61	0.60	0.35	0.14
1980	0.47	0.47	0.55	0.54	0.91	1.06	0.44	0.13
1981	0.48	0.54	0.55	0.53	1.02	1.03	0.30	0.12
1982	0.44	0.43	0.58	0.59	1.11	1.29	0.56	0.13
1983	0.37	0.37	0.46	0.48	0.91	0.87	0.53	0.11
1984	0.30	0.32	0.39	0.55	0.82	1.00	0.46	0.10
1985	0.38	0.42	0.77	0.75	1.57	0.51	0.13	
1986	1.25	1.61	0.27					

Source: See Below.

Table 12
West Africa: Ratios of producer prices to international prices, 1970-86 (converted at purchasing power parity exchange rates)

Year	Cameroon				Nigeria		Senegal	
	Arabica coffee	Robusta coffee	Cocoa	Cotton	Cocoa	Palm kernel	Groundnuts	Cotton
1970	0.56	0.49	0.46	0.51	0.65	0.54	0.27	0.16
1971	0.63	0.50	0.63	0.46	0.77	0.59	0.27	0.14
1972	0.63	0.50	0.56	0.45	0.84	0.80	0.36	0.15
1973	0.63	0.51	0.38	0.35	0.71	0.83	0.25	0.09
1974	0.52	0.41	0.30	0.35	0.68	0.52	0.16	0.08
1975	0.69	0.46	0.44	0.46	0.74	1.01	0.35	0.11
1976	0.37	0.27	0.28	0.36	0.37	0.74	0.35	0.09
1977	0.23	0.18	0.21	0.44	0.30	0.52	0.26	0.10
1978	0.38	0.33	0.29	0.46	0.33	0.45	0.27	0.12
1979	0.37	0.34	0.35	0.49	0.40	0.39	0.32	0.12
1980	0.41	0.40	0.47	0.47	0.56	0.65	0.44	0.13
1981	0.45	0.50	0.51	0.49	0.57	0.58	0.32	0.13
1982	0.43	0.42	0.56	0.57	0.62	0.72	0.57	0.13
1983	0.35	0.35	0.43	0.45	0.43	0.41	0.53	0.11
1984	0.28	0.29	0.36	0.50	0.28	0.34	0.53	0.12
1985	0.36	0.39	0.72	0.29	0.60	0.53	0.14	
1986	1.13	1.35	0.26					

Note: Seed cotton producer prices converted to lint cotton equivalent using 34% conversion rate.World Prices are: Coffee "Other Mild Arabica" for Arabica and "Angolan (Ambriz 2AA)" for Robusta; Cocoa "ICCO average daily price (New York and London);" Cotton "Egypt (Liverpool);" Palm Kernel "Nigerian (Europe);" Groundnuts "Nigerian (London)."
Source: IMF, *International Financial Statistics Yearbook*, various years; World Bank, Commodity Trade and Price Trends, 1987; Republique du Cameroun, "Bilan Diagnostique," 1980; Government Ministries of Agriculture; Lele, Oyejide, et al., "Nigeria's Economic Development."

contrast to the participatory coffee cooperatives in Kenya, it has had access to an excellent network of research on cotton undertaken by the *Compagnie Française de Développement des Fibres Textiles* (CFDT) in West Africa. Since the returns to CFDT (which has equity interests in SODECOTON) depend on the quantity of cotton exported, it has had a strong incentive to provide high quality (albeit high cost) technical assistance and to improve the provision of services to growers in order to increase cotton production. The political support of the government for development of the northern reaches of Cameroon has been no less important.

The two cocoa projects funded by the World Bank in Nigeria offer another example of the critical importance of nonprice factors. The projects were implemented during the oil boom, when the crop was heavily taxed and nominal wages rose threefold. The two projects nevertheless exceeded their cocoa planting targets—a rare occurrence in donor-funded agricultural projects in Africa. Underlying this successful performance was the efficient Nigerian management of the cocoa subsector. Another reason was that the returns to planting *improved* cocoa strains were fully competitive with labor use in the nonagricultural sectors. Participating farmers therefore concluded that benefits from cocoa could match those obtainable in other sectors when the oil boom subsided.

These cases raise questions about the extent to which prices alone matter relative to numerous nonprice factors

Table 13
East Africa: Trends in ratios of producer prices of export crops to food crops

	Kenya		Malawi				Tanzania			
Year	Coffee/ Maize	Tea/ Maize	Tobacco/ Maize	Coffee/ Maize	Groundnuts/ Maize	Cotton/ Maize	Cotton/ Maize	Tobacco/ Maize	Cashewnuts/ Maize	Coffee/ Maize
1967			6.09	9.79	3.30	2.73				
1968			4.30	10.07	3.07	3.23				
1969			6.83	14.69	3.31	3.38				
1970	27.2		7.84	11.66	3.31	3.28				
1971	19.1	19.5	7.71	8.03	3.03	3.37	4.23	22.31	3.46	
1972	20.0	15.5	7.32	9.90	3.61	2.87	4.58	24.17	3.75	18.75
1973	23.7	15.2	5.97	9.49	3.51	3.43	4.35	21.88	3.46	15.96
1974	21.7	15.5	4.86	10.73	3.59	4.34	3.42	18.91	2.73	13.33
1975	15.3	11.6	6.05	11.19	3.70	3.77	2.73	14.29	1.87	7.00
1976	32.9	13.8	5.40	8.75	3.11	2.25	2.50	9.66	1.29	10.00
1977	44.7	24.2	6.24	8.70	3.39	3.52	2.50	10.90	1.33	18.75
1978	31.7	17.8	7.80	11.28	3.70	3.94	2.71	10.67	1.31	12.81
1979	36.8	17.6	7.88	12.54	5.81	4.19	2.82	10.51	1.92	10.67
1980	27.6	16.7	6.31	0.40	4.60	3.25	3.00	8.95	1.73	11.42
1981	22.6	17.7	6.53	7.58	4.65	3.24	3.20	9.64	2.75	12.36
1982	25.8	18.0	4.03	4.50	2.87	2.45	2.47	7.41	3.09	9.93
1983	22.7	14.2	7.56	9.35	4.64	3.39	2.69	9.96	2.65	8.67
1984	22.0	29.6	6.61	8.33	4.89	3.31	2.73	7.61	2.95	10.40
1985	21.2	18.0	8.11	NA	5.57	3.56	2.10	6.30	2.42	6.75

Source: Kenya: Ministry of Finance, Economic Survey, Central Bureau of Statistics. Malawi: ADMARC and Ministry of Agriculture. Tanzania: World Bank, "Tanzania Agricultural Sector Report," 1983.

Table 14
West Africa: Trends in ratios of producer prices of export crops to food crops

	Cameroon				Nigeria						Senegal			
	Coffee/Maize Arabica	Coffee/Maize Robusta	Cocoa/ Maize	Cotton/ Maize	Cocoa/ Maize	Palm oil/ Maize	Rubber/ Maize	Cocoa/ Rice	Palm oil/ Rice	Rubber/ Rice	Groundnuts/ Maize	Cotton/ Maize	Groundnuts/ Millet	Cotton/ Millet
1970	10.20	7.40	4.95	1.76							1.03	1.67	1.09	1.76
1971	9.40	7.10	4.80	1.71							1.28	1.67	1.36	1.76
1972	9.70	6.90	4.80	1.78							1.28	1.72	0.92	1.24
1973	10.00	6.50	4.78	1.60							1.56	1.79	0.98	1.03
1974	7.90	5.60	4.58	1.46							1.66	1.68	1.38	1.40
1975	6.70	4.10	3.53	1.00							1.19	1.34	1.19	1.34
1976	8.50	6.10	4.40	1.09	3.37	1.50	N.A.	2.19	0.99	N.A.	1.19	1.34	1.19	1.34
1977	7.20	5.60	3.33	0.80	3.98	1.37	1.40	3.07	1.06	1.09	1.12	1.32	1.04	1.22
1978	7.20	5.60	4.40	0.72	4.18	1.44	1.47	2.57	0.89	0.92	1.12	1.32	1.04	1.22
1979	5.80	5.20	4.42	0.61	4.12	1.54	1.44	2.49	0.93	0.87	1.12	1.49	1.14	1.37
1980	5.70	5.30	4.83	0.61	4.19	1.59	1.56	2.09	0.80	0.79	1.35	1.62	1.00	1.20
1981	5.70	5.10	4.15	0.60	2.63	1.00	1.22	1.37	0.53	0.62	1.49	1.44	1.40	1.36
1982	6.40	5.00	4.04	0.64	3.05	1.16	1.64	1.54	0.59	0.83	1.49	1.66	1.40	1.56
1983					2.62	0.93	1.30	1.83	0.64	0.92	1.49	1.66	1.27	1.42
1984					1.97	0.79	0.99	1.14	0.46	0.57	1.60	1.56	1.45	1.42
1985											1.50	1.67	1.64	1.67
1986											1.29	1.43	1.29	1.43

Source: Cameroon: Ministry of Agriculture, "Bilan Diagnostique," 1980; World Bank, Country Economic Memorandum, 1987. Nigeria: Marketing Commodity Boards. Senegal: Ministère du Développement Rural, "Programme de Sauvegarde et d'Ajustement de la Filière Coton du Sénégal," 1987.

They also raise questions as to the role that stable and unstable prices play in increasing production, and as to differences in this regard between annual and tree crops. In the case of export crops, price stabilization has typically been associated with taxation of the export crop sector. These two issues are therefore considered together.

The experience with coffee and tea in Kenya, cotton in Cameroon, and cocoa in Nigeria has shown good production and export performance under circumstances of both high and low taxation as well as stable and unstable prices. The argument for providing international (which are unstable and high) prices to producers frequently states that upswings in tree plantings occur in periods of price booms and that countries that do not pass on international prices to producers lose out on the consequent supply response; by the same token, in periods of low prices, producers tend not to uproot tree crops but simply to reduce variable expenditures—unless the price decline is sustained through public policy as in Tanzania. Kenya's experience supports all these arguments. It also shows that considerable revenues can be generated even at low (but mildly progressive) rates of taxation by increasing production in response to high prices. Moreover, higher producer incomes result in increased household savings and invest-

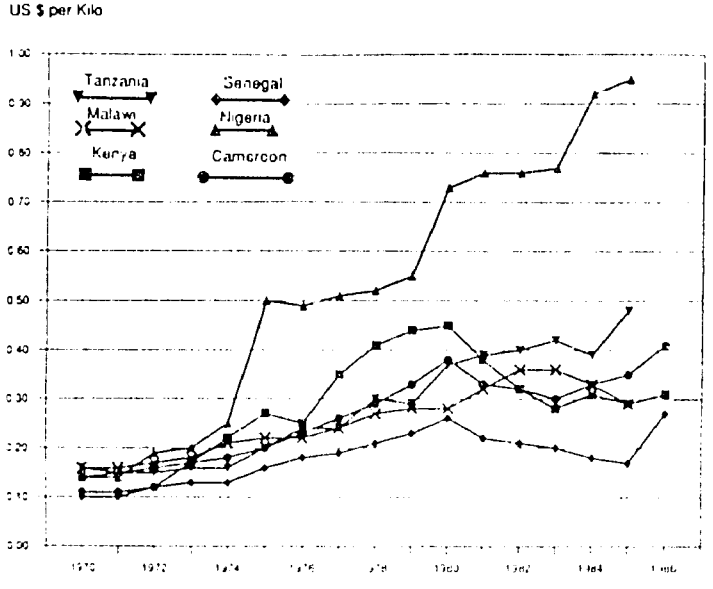
Table 15
Comparative crop yields in the MADIA countries, 1970-85 (in kg. per hectare)

East Africa	Tea		Coffee		Tobacco		Sugar	Cotton	Maize
	Smallholder	Estate	Smallholder	Estate	Smallholder	Estate			
Malawi									
1971-75	231	1,399			375	1,076	10,696	406	
1976-80	416	1,734			398	1,189	10,528	614	
1981-85	648	1,929			342	1,238	11,290	537	1,171
Kenya									
1971-75	1,345	1,735	608	1,139				269	1,895
1976-80	1,199	2,289	737	1,271				278	1,881
1981-85	1,137	2,524	604	1,075				184	1,821
Tanzania									
1971-75	-	1,149						528	645
1976-80	-	1,356						592	-
1981-85	430	1,291						380	-

West Africa	Cocoa	Coffee	Rice	Millet/ Sorghum	Groundnuts	Cotton	Maize
Senegal							
1971-75			1,081	549	718	1,081	823
1976-80			1,328	565	706	816	811
1981-85			1,617	654	750	1,009	990
Cameroon							
1971-75	348	325	886	773	787	541	1,151
1976-80	252	270	1,751	848	520	1,146	822
1981-85	267	295	3,699	785	266	1,308	980
Nigeria							
1971-75	3,426		1,679	574	516	307	764
1976-80	2,374		1,906	613	702	203	857
1981-85	2,037		2,033	709	946	120	996

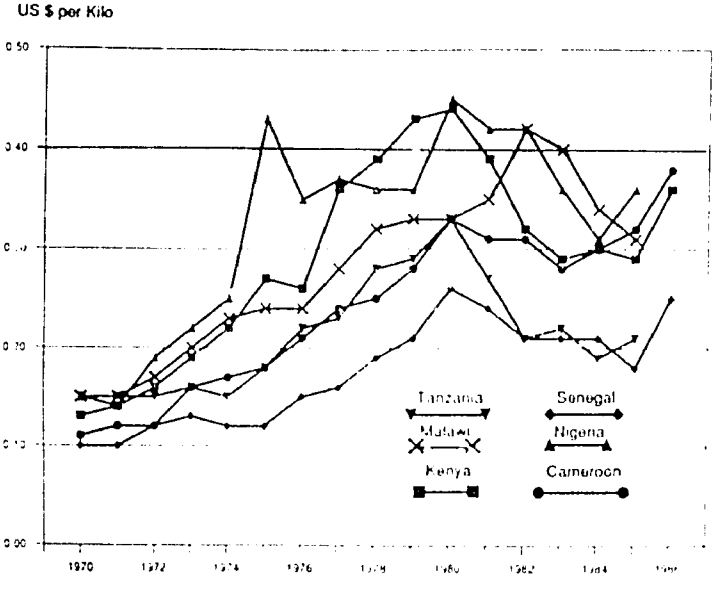
Source: World Bank Database (BFSD).

Figure 7
Cotton producer prices at nominal exchange rates (in U.S. dollars per kilo)



Source: Lele, van de Walle, and Gbetibouo 1989.

Figure 8
Cotton producer price at purchasing-power-parity exchange rates (in U.S. dollars per kilo)



Source: Lele, van de Walle, and Gbetibouo 1989.

ment that stimulate even greater growth because of the dynamism they create in the rest of the economy.

Many reasons are also offered in support of price stabilization and export taxes. For example, relatively inelastic world demand for a given crop under conditions of high producer responsiveness and high shares of individual countries in the world market could lead to excess supply and a fall in world prices. Moreover, if demand were primarily concentrated in developed countries, a fall in price would mainly benefit developed country consumers. Indeed, as Lele and Jain point out, concern about this scenario led the World Bank to adopt a policy in 1973 to halt financing for further expansion of tea (except when countries had no other production alternatives), and to confine assistance to the rehabilitation of existing acreages and the processing of output already on stream. Similar *de facto* guidelines were applied to coffee. Paradoxically, Kenya's smallholder tea and coffee production increased. The reason for this was that the distinction between area expansion and rehabilitation made in donor policy toward export crop farming turned out to be arbitrary--since much of the actual increase in smallholder export crop production in Africa has come from area expansion, even though it was intended to come from productivity increases.[31] Labor availability and the lack of farm services have been the most constraining factors to intensification, and it has been more profitable, at the margin, to increase acreage than to intensify existing production. Donor investments in processing and in rehabilitation measures have actually encouraged the expansion of acreage by providing a market stimulus that would not otherwise have existed.

As regards export taxes, a strong comparative advantage in the production of an export commodity may entail substantial producer rents, some of which could be taxed away without adverse effect on the return to resource use relative to the next best option. Moreover, taxation of the agricultural sector may be compensated for by government expenditures that directly or indirectly support agriculture—for example, by expanding markets and raising productivity through better farmer access to technology, inputs, and information. Thus, policies for taxing the agricultural sector should not be confused with the need for producer price stabilization—and in any case neither can be judged adequately without also taking into account public expenditures on agriculture that offset the revenue raised.

Stabilization may be more appropriate for annual crops than for tree crops. First, prices and yields of annual crops vary more than those of tree crops, thereby increasing farmers' risks and uncertainties. Second, most annual crops are of lower value than tree crops (at international prices), so that the return to factor use tends to be less attractive compared to competing food crops—making switches from annual export crops to food crops more probable.

Finally, fluctuations in domestic production (to which annual crops are more prone than tree crops) may also adversely affect capacity utilization in downstream processing activities—as, for example, in the case of groundnuts in Senegal and cotton in Kenya (where price stabilization may help stabilize supply by permitting increased use of purchased inputs). On the other hand, rising capacity utilization of processing facilities may reduce processing margins and stimulate higher producer prices and production.[32] Supply stabilization through domestic production stabilization may also be necessary for trade policy (to improve—at least in theory—internal supply).

These various arguments—together with the fact that the evidence from MADIA countries supports conflicting conclusions—suggests that there is no unique solution to the pricing issue, and that donors need to beware of reliance on generalized approaches that overlook the need for addressing country- and crop-specific production situations. Governments, in turn, face various socioeconomic and political dilemmas of their own with regard to this issue—in particular, a stabilization-plus-export-tax approach may appeal to them on the grounds that they are unwilling to incur the substantial regional income disparities and income instability that the application of international parity pricing would entail. Their ultimate decisions may depend a good deal on the political history of their countries. In the MADIA sample, Kenya seems better able to handle these political problems, although recent experience with policy reform in the other countries suggests that this attitude might change over time.

Diversification policies within food crop agriculture. Apart from the shift in production from export crops to food crops, each of the six countries has also experienced some diversification within food crop agriculture. Most African governments have ignored the production of their traditional food crops—for example, sorghum, millet, cassava, and yams—produced and consumed by a large majority of their citizens. Instead, they have favored the high cost production of rice and wheat to meet the rapidly growing demand in the urban sector; indeed, rice has been the fastest growing crop in the MADIA countries. In Nigeria, the costs of domestic rice were subsidized through major investments in local production, and consumer prices of food imports were kept low through overvaluation of the exchange rate. In Senegal, although income from groundnut production is seven times that from rice in a normal year, improvement in groundnut production received relatively little policy attention compared to the priority given to the promotion of irrigated rice in the Fleuve. This is of particularly serious concern because MADIA analysis suggests that Senegal has a distinct comparative advantage in groundnut production under *improved technology*.[33] In East Africa, where maize dominates in production and consumption, less effort has been expended on the import-substitution of rice and other preferred crops.

Another aspect of the food crop diversification issue is the production of horticultural crops. These crops, in general, have not been controlled by governments, and they offer substantial scope for income and employment generation among small farmers. The growth of many such crops offers impressive examples of "uncontrolled" diversification—for instance, in the highlands of Cameroon. Kenya's exports of horticultural crops have grown at an annual rate of 12 percent (albeit from a small base) during 1970-85. The production of such crops to meet growing urban and export demand has occurred in response to investments in infrastructure—particularly roads. Such diversification typically gets overlooked in evaluations of price policies and responses and its impact on welfare gains may be understated. In general, its implications for public policy (as regards the development of supportive transportation, storage, information, and financial networks for private trade) have yet to receive attention from governments and donors on the necessary scale.

Land policy. Much of the increase in agricultural production in the MADIA countries over the past two decades has resulted from an expansion of land area under cultivation, while the composition of output has been determined

mainly by shifts in relative crop prices. Price variables have determined the value-added by labor use—the single most important component of the value of output. The ability of producers to mobilize additional land and labor, along with such little capital as is used in production (for example, implements, animal traction, or fertilizer) has been crucial in raising production levels.

In Cameroon and Nigeria, access to tractors has influenced the ability of rural households to clear land, and subsidies on tractor operations have made a notable impact. On the other hand, the institutional and juridical aspects of land policy—such as legally specified rights to the use and ownership of land or rights to grow crops—have not been prominent issues there in contrast to the situation in the East African countries, where they have been of critical importance in determining agricultural performance.[34]

In Kenya, land policy involved settlement of Africans on land formerly owned and operated by European settlers in the Rift Valley and the White Highlands. A relatively competitive land market has evolved, and large increases in land titling have occurred in areas of high potential, where rights to grow high value tree crops such as tea and coffee (along with dairying) have been promoted. Smallholder tea hectarage increased almost tenfold and coffee hectarage doubled during 1970-85. The amount of land registered increased from 1.8 million hectares to 6.5 million hectares between 1970 and 1983. The share of smallholders in total registered land was 43 percent overall, but it was well over 80 percent in Western, Nyanza, Central, and Eastern provinces—the heart of smallholder production in Kenya. Although smallholders have had recourse to legal ownership in Kenya, the process of land-titling has been fraught with unequal access to capital and land, due to ethnic biases, conflicting tenure customs, and registration fees.[35] This has contributed to the migration of population onto marginal land and, consequently, contributed to an unsustainable process of soil exhaustion.

In Malawi, customary rights to cultivate and transfer smallholder land are conferred by traditional tribal chiefs, while the expansion of estate farming has been explicitly determined by government policies. Burley and flue-cured tobacco has been reserved for estates through a licensing policy that accompanies the establishment of leaseholds on "unused" customary land. The transfer of land from smallholders to estates has contributed to economic growth through estate production but has worsened land distribution over time and led to a decline in average farm size in both sectors. The crowding out of land under increasing population pressure, as well as the growing subsistence requirements, appear even more serious in view of the estimated 75 percent of estate land not utilized. Although the process of technical change may be slower for smallholders than for estates, land policy will be one of the most important factors determining future agricultural growth in Malawi.

In Tanzania, smallholder control over land has suffered as a result of state policy. Tanzania formally abolished traditional tribal village authority, replacing it with public ownership of land whereby an individual has no right of ownership or sale. The ideology of the ruling party, buttressed by growing support at the grassroots level, discouraged "capitalist farming" by large and small farmers alike in the 1970s. The policy of forced "villagization" resulted in the resettlement of more than 9 million people—about 60 percent of the population—into 6,000 villages by mid-1975. Given the weak soils (the reason for traditionally sparser settlements), the Ujamaa policy toward land increased environmental stress and led to greater problems of erosion and deforestation.

Yet there were also some positive aspects as well to land policy in Tanzania. Investments in the Tanzam road and rail links opened up areas of high agricultural potential for spontaneous settlement in the Southern Highlands. Since Western donors declined to finance the railway, Tanzania had to seek funding from China. These areas are now an important source of agricultural production (of coffee, tea, maize, and tobacco). Unfortunately, these gains have been offset by the government's discriminatory investment and pricing policies which hurt the traditional production areas in the North and the West, as well as by the bias of these policies toward low income, resource-poor regions.

Labor policy. Another important issue relating to factor mobilization in East Africa has been the use of labor policy. The use of labor legislation and minimum wage laws as well as the prevalence of unionism have been most widespread in Tanzania. Together with the political campaign to discourage the use of hired labor, these factors have played a part in the decline of both smallholder and large-scale agriculture in Tanzania.

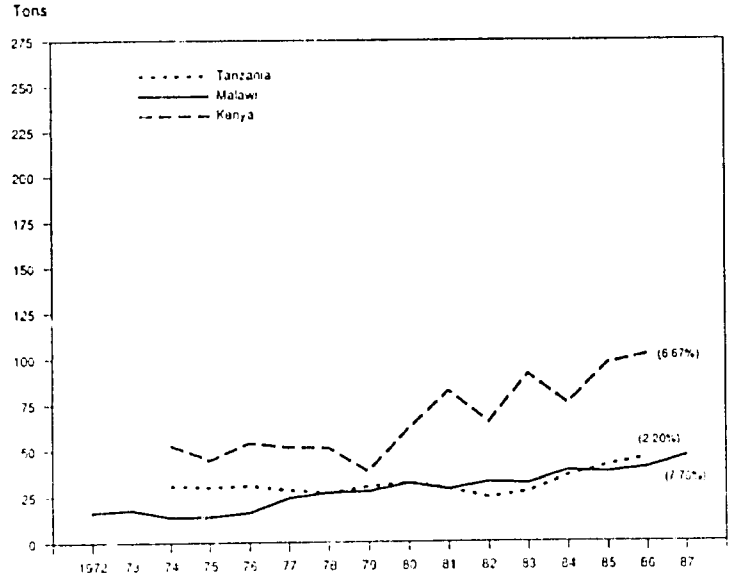
The Malawian government, on the other hand, neglected the unionization of labor, and wage employment in estate production grew at nearly 10 percent per annum in the 1970s. This occurred in circumstances of falling real wage rates—due to the discriminatory land policy that created an elastic supply of labor from the smallholder sector.

Kenya, in contrast, created a wide range of employment opportunities in the agricultural sector in both smallholder and estate farming, as well as nonfarm activities. Although minimum wage guidelines were observed in agricultural employment, Kenya followed more moderate policies than the other two East African countries. Despite population growth, real wages have fallen less in Kenya in comparison to their levels in the early 1970s. In Malawi and Tanzania, on the other hand, they have fallen by half.

Transport infrastructure. The development of rural feeder road networks—a key determinant of growth in smallholder production—has varied across the MADIA countries. Kenya, Malawi, and Senegal have had better programs of feeder road development and maintenance. In Senegal and Malawi, this has had little impact on agricultural growth—in the former, due to poor natural resources, and in the latter, due to land and pricing policies that have kept effective domestic demand very low. Both Nigeria and Tanzania have experienced serious problems with the maintenance of newly constructed and existing feeder roads, while Cameroon's transport network is still in its early stages of development.

Fertilizer policy. It is difficult to establish a global correlation between agricultural performance and the growth of fertilizer use in the MADIA countries. This is not surprising in view of the important role played by macroeconomic and other sectoral policies (including explicit and implicit taxation of agriculture, the rights to grow export crops, and the ability of small and large farmers to mobilize land and labor).[36] Kenya, which led the MADIA countries in terms of the most rapid growth in food and export crop production, was fourth in the growth of fertilizer use (6.7 percent during 1974-86 (see Figures 9 and 10). Nigeria, in contrast, shows the most rapid growth (18.0 percent during 1972-87) but was one of the poorest agricultural performers.

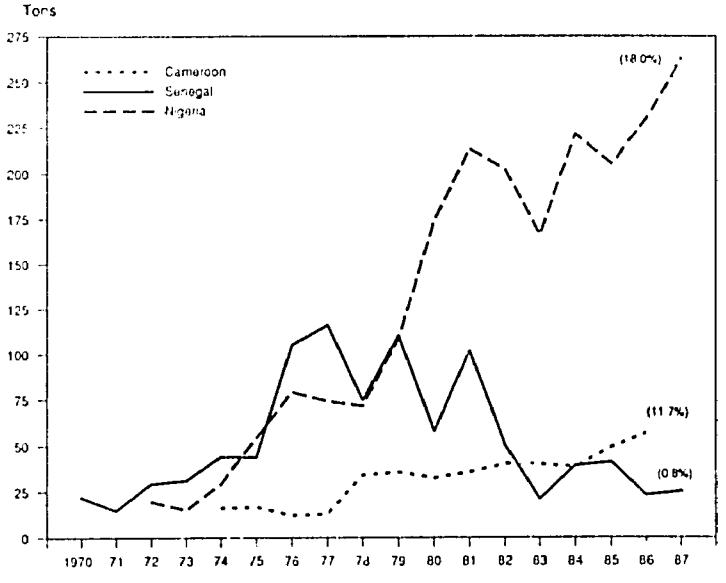
Figure 9
Trends in fertilizer consumption in East Africa, 1972-87 (nutrients in tons)



Note Figures in brackets represent growth rates of fertilizer consumption

Source Lele, Christiansen, and Kadiresan 1989

Figure 11
Trends in fertilizer consumption in West Africa, 1970-87 (nutrients in tons)



Tanzania and Senegal, both of which performed poorly in agriculture, also had the least satisfactory growth in fertilizer use (i.e., 2.2 percent and 0.8 percent, respectively). Malawi and Cameroon were in the middle—both in performance and in the growth of fertilizer use (11.7 percent and 7.7 percent, respectively).

Among the six countries, Kenya has been least reliant on explicit subsidies of fertilizers (which were eliminated in 1977), while Tanzania and Nigeria have relied on them the most. The rate of explicit fertilizer subsidy in Tanzania and Nigeria was similar (75 percent in the 1970s in Tanzania, and 85 percent throughout in Nigeria). Explicit subsidies in Senegal (55 percent), Cameroon (54 percent), and Malawi (23 percent) have been relatively moderate.[17] The overvaluation of the exchange rate in Nigeria and Tanzania has meant implicit subsidization of fertilizers and other imported inputs.

Recent reform measures have focused on the removal of fertilizer subsidies and the privatization of distribution networks as a way of reducing deficits and the role of the public sector. Policy reform efforts have not, however, addressed the broader and longer-term issues of the role of fertilizer in agricultural intensification, in the context of low levels of agricultural productivity, increasing population pressure and scarcity of arable land, soil degradation, and increasing reliance on food imports.

It is important to recognize the extent to which a lack of supply of fertilizer to the smallholder sector—as distinct from demand—has been responsible for the insufficient growth in fertilizer use observed in many countries. For example, despite the overall success of agriculture in Kenya, the supply of fertilizer has been hindered by a variety of constraints including, among other things, the shortage of foreign exchange; a lack of credit to importers, distributors, and farmers; and the limits of the private sector in increasing the supply of fertilizer in areas where returns to fertilizer use are low. Tanzania and Cameroon have faced similar supply problems. In Malawi, on the other hand, the lack of effective demand for fertilizer has been a greater problem than in other countries due to low returns to and high risk in fertilizer use by small farmers—although a number of supply constraints also exist. In Senegal, the collapse of fertilizer use in the Groundnut Basin is largely the result of the failure of the supply system, although the demand for fertilizer fluctuates from year to year due to the risks associated with low and declining rainfall. In Nigeria, a strong supply push by the government (both through a generous allocation of foreign exchange and an active role in distribution) has led to impressive growth in fertilizer use in the past. The highly distortionary effect of large implicit and explicit subsidies made fertilizer application highly profitable, despite response coefficients that some sources reported to be low but that others contested.

In general, fertilizer subsidies are to be regarded as undesirable for a variety of reasons, including their equity effects and the difficulty of controlling their cost. They are often ineffective because they address only the price dimension of fertilizer use and not the supply constraints. Nonetheless, it must be recognized that a combination of (1) supply constraints and (2) benefit-cost ratios that do not compensate for the risk of fertilizer use (because of low response coefficients) even though it is profitable, may restrict the use of fertilizer among some groups (as observed, for example, in the case of smallholders growing local maize in Malawi). It is in these circumstances that subsidies are necessary in the short run as a device to encourage fertilizer use until the other constraints hindering the latter are addressed.

Although evaluation of the experience with privatization of fertilizer distribution may be premature in some of the countries—for example, in Malawi, where private trading has been planned but has not been implemented—the trends in other countries permit a judgment. While Kenya, with its history of a dynamic private sector, might be regarded as the country where privatization would be most successful, its experience has been mixed. On the one

hand, privatization and liberalization have allowed large agricultural units such as estates and some cooperatives improved access to fertilizers. On the other hand, small-scale agricultural producers, especially those in remote areas, have not benefited because the private sector has tended to concentrate its attention on the large producers. Although the private sector can improve the efficiency of input distribution, it must be recognized that, in general, it cannot alone meet the needs of all producers. Nor can it be expected to promote or create demand for inputs where fostering a profitable level of demand will require a substantial investment of time and resources. In addition, given the complex agronomic dimensions of soil fertility that need to be addressed in most African countries, it is unreasonable to expect the private sector alone to attempt solutions to problems of soil management and credit supply for farmers.

It is important to stress that lack of knowledge about physical responses to fertilizers is one of the most serious problems in the formulation of effective long-term policy. Because relatively little donor assistance has been directed toward understanding the determinants of fertilizer use at the farm level in Africa, policymakers and donors are poorly equipped to design and implement policies in support of intensification. Given the amount of time required to generate reliable data and the confusion caused by the results of short-term trials financed by donors, a long-term commitment by donors and governments to produce better information on the fertilizer sector is urgently needed. This will require developing the capacity of African analysts and institutions to undertake this work on a long-term basis as a routine component of agricultural policy.

Credit policy. All six countries have subsidized agricultural interest rates, but in Kenya and Malawi these have been lower than in Tanzania, Nigeria, or Senegal. The amount of seasonal and medium-term credit available has been largest in Kenya, followed by Malawi, Senegal, and Tanzania. In Cameroon, credit has been tied to the promotion of specific export crops, such as coffee and cotton, and this has benefited fewer farmers than in Kenya or Malawi. In all the countries, much of the available subsidized credit has accrued to the larger farmers. Only in Kenya and to a lesser extent in Malawi have smallholders benefited significantly from the provision of institutional credit.

Agricultural research and technology. The relative neglect of research and technology by both governments and donors has been one of the most important long-term reasons underlying the poor agricultural performance in Africa. Increased factor productivity is important not only because of its welfare implications, but also because the achievement of food security can help release land and labor for diversification into higher value production for domestic use or for export.

African political elites have not shown sufficient appreciation of the fundamental importance of science and technology in modernizing smallholder agriculture. Furthermore, small farmers' interests are so poorly articulated in African countries (although Kenya is an exception) that this has not been an avenue for excercising influence on research priorities. Donor efforts, incuding those of the Consultative Group on International Agricultural Research, have been largely supply- rather than demand-driven, and they have not adequately reflected the constraints faced by the mass of small farmers.[38]

The growth of maize production in a wide range of ecological conditions in the MADIA countries provides one of the few examples of technical change in the food crop sector. Not only do traditional varieties of maize offer higher yields than sorghum and millets, but more fertilizer-responsive varieties of maize have become available. Despite weak adaptive on-farm research, Kenya's hybrid maize program has been quite successful in developing an improved seed distribution program and in ensuring its rapid adoption. These successes are reflected in the fact that up to 60 percent of its smallholder maize acreage is under hybrid or composite varieties, compared to less than 10 percent in any of the other countries. Much of this gain was achieved in the 1960s, and little subsequent intensification has taken place. Malawi's hybrid maize research program faces the question of whether research should focus on flint or hybrid dent maizes. Hybrids are more sensitive to growing conditions and thus their yields are more variable, though higher on average than traditional varieties. Low current adoption of hybrid varieties primarily reflects the inadequate resource base of small farmers and their inability to bear the risk of variable output—but is also due to a complex of other factors including consumer preference for flint maize, its better storage characteristics, and inadequate access of farmers to credit and extension. In West Africa, improved maize has done well in northern Nigeria and the high potential areas of Cameroon. Little technical change has occurred, however, in the production of other food crops

In contrast, export crop research has been of high quality historically, but has deteriorated in countries such as Tanzania and Nigeria in the postindependence era. Despite a substantial increase in research expenditures during the oil boom in Nigeria, the lack of political commitment and stability has seriously undermined the capabilities of a once impressive scientific community. In Tanzania, major adverse factors have included the breakup of the East African Community on which it depended for research, especially in tea and coffee; the sudden withdrawal of the British Cotton Research Corporation in 1975; and the primacy of ideological over technocratic considerations in the content and conduct of agricultural policy. Kenya and Malawi, in contrast, have had excellent agricultural research systems for their major export crops that have been financed through levies on these crops.

In the francophone countries commodity research carried out by the French has continued uninterrupted; however, less training of nationals has occurred in comparison to what was formerly provided by the British for export crops in the anglophone countries (and more recently by the Americans for food crops). Although research efforts have yielded some important innovations—such as drought-resistant varieties of groundnuts, promotion of sole cropping, and the increased use of animal traction in Senegal—they have not addressed the serious problem of soil degradation, or the special need to integrate cropping, livestock, and tree farming by smallholders in order to protect the environment.

In contrast to the colonial era, export crop research has been neglected by governments and donors alike since the early 1970s. Both humanitarian concerns regarding food security as well as environmental effects of export crop development have dominated constituency concerns in the Western community. The Consultative Group on International Agricultural Research for instance, has provided little support for export crop research.

Although the recent trend among donors to invest in agricultural research is long overdue, it seems to be overloading recipient capacities to manage such research effectively (as observed in Tanzania, Malawi, and Kenya) and to integrate work done by national researchers with that of expatriates (as in Senegal). A common defect of these efforts has been excessive emphasis on the provision of "brick and mortar" and expatriate technical assistance, and not enough emphasis on establishing long-term human and institutional capacity—or even on using the pool of human capital that has been developed—to address the *substance* of technological issues.

Institutional development. Each of the six countries has faced special problems concerning the development of effective institutions for smallholder development. The successful cases of smallholder development in the MADIA countries highlight the role that stable and flexible institutions for agricultural research, marketing, credit, and extension play in providing important preconditions for growth. The development of responsive agricultural institutions in turn depends on the effective political and technocratic representation of small farmer interests.[39]

The responsiveness of agricultural policy to grassroots institutions has been greatest in Kenya, where routine mechanisms have been established to articulate the interests of smallholders. The role of smallholders in Kenya's struggle for independence—based as it was on the Africans' assertion of land rights denied to them during the colonial era—together with significant government support (including the allocation of administrative and financial resources) has contributed to the development of a highly decentralized system that articulates and responds to producer interests. In fact, cooperatives represent 50 percent of small farm households. Kenya has also produced successful and internationally renowned smallholder organizations such as the Kenya Tea Development Authority.

In the other countries, however, governments have shown an active pessimism about the efficiency of small farmers and little enthusiasm for grassroots organizations. The latter have often been viewed as alternative bases of political power—a perception that has caused much institutional instability *despite* the existence of stable political regimes. Tanzania's socialist policies, for example, extolled the rhetoric of participation, but were associated in practice with a high degree of centralization—as reflected in top-down directives for moving the rural population into "Ujamaa" villages and in the abolition of cooperatives, which were, at least in part, seen as a threat to the party's political dominance. Despite the fall in the share of estates in the production of tea and coffee during 1965-84, the political representation of smallholder interests did not improve.

In Malawi, the productive base has been oligarchic and has virtually stunted smallholder development. Smallholder participation consequently has been bypassed and cooperatives have not been permitted. With the demise of estate-led growth in the late 1970s, the onset of structural adjustment, and the growing power of the technocracy, greater attention has been focused on broad-based participation.

In much of West Africa, smallholder participation has suffered from weak organization and strong ethnic cleavages. In Nigeria, where the production of individual crops can be closely identified with specific regional groups, ethnic factors—coupled with organizational problems such as inadequate resources and geographic dispersion—have made impossible the formation of producer organizations that cut across ethnic barriers. In Cameroon, the government has pursued a top-down, "vertically-integrated" approach to smallholder farming. Yet the successful experience with cotton production in the North illustrates how even a top-down approach can confer substantial benefits to the smallholder sector if price and nonprice factors are favorable.

Technocrats have played a more active role in Kenya Malawi, and Cameroon than in Nigeria, Tanzania, or Senegal. In Tanzania and Nigeria, technocrats have been largely subordinated to ideological and military interests. The different roles of the technocracy in the management of the oil boom in Nigeria and Cameroon explain, in part, the differences in their agricultural performance. Despite large public expenditures on agriculture, the military leadership in Nigeria relegated agricultural policy to a secondary role in the 1970s which led to a weakening of the Nigerian technocracy at the state, district, and local government levels, placing a serious limitation on the national capacity to generate responsive smallholder development programs and policies. The technocracy in Cameroon, on the other hand, showed greater effectiveness in combining the benefits of the oil boom with the need to maintain a strong agricultural base.

The fragmentation of responsibility for policy planning has been a major problem in several MADIA countries. Ministries of agriculture in Kenya and Malawi have had relatively strong, clear roles in policymaking, even though their capacity to implement programs has been rather weak.[40] In Tanzania, the party and the prime minister's office have had far greater policy influence in agriculture than the Ministry of Agriculture or other technical ministries since the decentralization of government in the 1970s. In Nigeria, Cameroon, and Senegal, on the other hand, the locus of policy responsibility has been widely dispersed among numerous parastatal agencies and autonomous project units—instead of being concentrated in government departments and ministries of agriculture.

Notes

1. See Uma Lele and Ellen Hanak, eds., *The Politics of Agricultural Policy in Africa* (Washington, DC: World Bank, forthcoming).

2. See S. Kuznets, *Six Lectures in Economic Growth* (Glencoe, Illinois: Free Press of Glencoe, 1959); K. Okhawa and N. Takamatsu, *Capital Formation, Productivity and Employment: Japan's Historical Experience and its Possible Relevance to LDCs*, International Development Center of Japan, 1973; S. Ishikawa, *Economic Development in Asian Perspective* (Tokyo: Kinokuniya, 1967); B. Johnston and J. Mellor, "The Role of Agriculture in Economic Development," *American Economic Review*, 51 (1961):566-593; B. Johnston and P. Kilby, *Agriculture and Structural Transformation: Economic Strategies in Late Developing Countries* (New York: Oxford University Press, 1975); J. Mellor and B. Johnston, "The World Food Equation: Interrelations among Development, Employment, and Consumption," *Journal of Economic Literature* 22 (1984): 531-574.

3. Jagdish Bhagwati has argued that a purely export-led growth that does not involve agriculture may be both necessary and desirable in some cases. See Jagdish Bhagwati, "Rethinking Trade Strategy," in John P. Lewis and Valeriana Kallab, eds., *Development Strategies Reconsidered* (Washington, DC: Overseas Development Council, 1986). The opposing case is made by John Mellor in "Agriculture on the Road to Industrialization," in the same book.

4. See, for example, Bruce Johnston's elaboration of Harry Johnson's notion of capital in Bruce Johnston, Allan Hoben, William Jaeger, and Dirk Dijkerman, *An Assessment of A.I.D. Activities to Promote Agricultural and Rural Development in Sub-Saharan Africa* (Ithaca: Cornell University Press, forthcoming).

5. For an exposition of the need for sequencing and phasing, see Uma Lele, *The Design of Rural Development: Lessons from Africa* (Baltimore: The Johns Hopkins University Press, 1975).

6. See, for example, Peter T. Bauer, *Equality, the Third World, and Economic Delusion* (Cambridge, MA: Harvard University Press, 1981); Peter T. Bauer, *Reality and Rhetoric* (Cambridge, MA: Harvard University Press, 1984); Theresa Hayton and Catherine Watson, *Aid: Rhetoric and Reality* (London: Pluto Press, 1985); Frances Moore Lappe, Joseph Collins, and Cary Fowler, *Food First: Beyond the Myth of Scarcity* (Boston: Houghton-Mifflin, 1977).

7. See Uma Lele and Ijaz Nabi, eds., *Aid and Development: The Transition from Agriculture to Industrialization, and from Concessional Assistance to Commercial Capital Flows* (San Francisco: Institute of Contemporary Studies, forthcoming).

8. The studies derive their factual and analytical content from a wide array of sources in both donor and recipient countries. Apart from an intensive examination of documents in donor missions and archives, each report has relied on extensive personal interviews with key officials and their host country counterparts, who are involved in the actual administration and supervision of the projects and loans under review. In addition, a variety of secondary sources from the development literature, unpublished theses and dissertations, recipient country documents, and interviews with scholars familiar with agricultural and rural development in the six selected countries have also been taken into account.

9. The data for this section are from Maria Cancian, "Aid Allocations to Cameroon, Kenya, Malawi, Nigeria, Senegal and Tanzania: A Review of the OECD Databases," MADIA Paper (Washington, D.C.: World Bank, October 1987). According to the OECD, official development assistance (ODA) is defined as "flows to developing countries...provided by official agencies for developmental purposes with a grant element of at least 25 percent." *Geographical Distribution of Financial Flows to Developing Countries* (OECD, 1986), p. 281.

10. See Robert F. McNamara's Preface in *The Assault on World Poverty: Problems of Rural Development, Education and Health* (Baltimore: The Johns Hopkins University Press for the World Bank, 1975).

11. See "Accelerated Development in Sub-Saharan Africa: An Agenda for Action," Report No. 3358 (Washington, DC: World Bank, August 1981).

12. See Postscript to Uma Lele, *The Design of Rural Development: Lessons from Africa* (Baltimore: The Johns Hopkins University Press, 1975).

13. Total Receipts Net (TRN) includes ODA as well as other official nonconcessional, bilateral, multilateral, and trade-related transactions, including export credits and other changes in bilateral long-term assets of the private nonmonetary and monetary sectors, private direct investment, portfolio investments, and loans by private banks (Ibid, p. 282)

14. As Howell has discussed, Malawi—where this capability was indigenously sustained—is an exception.

15. See Michael Lipton, "Limits of Price Policy for Agriculture: Which Way for the World Bank?" *Development Policy Review* (London) 5, 1987, pp. 197-215.

16. See Uma Lele, Robert Christiansen, Paul Fishstein, and Mathurin Gbetibouo, "Planning for Food Security in Africa: Lessons and Policy Implications, 1960-1988," MADIA Working Paper (Washington, DC: World Bank, forthcoming).

17. See Uma Lele and Steven Stone, "Population Pressure, the Environment, and Agricultural Intensification: Variations on the Boserup Hypothesis," MADIA Working Paper (Washington, DC: World Bank, 1989).

18. This was, in part, also a result of Tanzania's choice of a costly industrialization strategy.

19. See Lipton, "Limits of Price Policy."

20. See Sidi Jammeh, Uma Lele, and Mathurin Gbetibouo, "Building Agricultural Research Capacity in Senegal," MADIA Working Paper (Washington, DC: World Bank, 1988).

21. Consumer goods had become more scarce in Tanzania—compared to Kenya or Malawi—because the "Basic Industries Policy" pursued by the government went awry, in part due to the large defense expenditures on the war with Uganda as well as the breakup of the East African Community.

22. In Senegal's Groundnut Basin, for example, the inferior soil texture, lower rainfall, and greater rainfall variability have limited the production possibilities of groundnuts and sorghum/millet.

23. See Yaw Ansu, "Macroeconomic Shocks, Policies and Performance: A Comparative Study of Kenya, Malawi and Tanzania, 1967-1984," MADIA Paper (Washington, D.C.: World Bank, July 1986), and Pierre Seka, "Macroeconomic Shocks, Policies and Performance: The Case of Three West African Countries—Cameroon, Nigeria and Senegal," MADIA Working Paper (Washington, D.C.: World Bank, 1987).

24. See Uma Lele, "Structural Adjustment, Agricultural Development, and the Poor: Lessons from the Malawian Experience," MADIA Working Paper (Washington, DC: World Bank, 1988).

25. See Uma Lele, A.T. Oyejide, Vishva Bindlish, and Balu Bumb, "Nigeria's Economic Development, Agriculture's Role, and World Bank Assistance: Lessons for the Future," MADIA Working Paper (Washington, DC: World Bank, 1989).

26. See Uma Lele, "Tanzania: Phoenix or Icarus?" in Arnold Harberger, ed., *World Economic Growth* (San Francisco, CA: Institute of Contemporary Studies, 1984), and Paul Collier, "Aid and Economic Performance in Tanzania," in Uma Lele and Ijaz Nabi, eds., *Aid and Development: The Transition from Agriculture to Industrialization and from Concessional Assistance to Commercial Capital Flows* (San Francisco, CA: Institute for Contemporary Studies, 1987).

27. See Uma Lele and L. Richard Meyers, "Growth and Structural Change in East Africa: Domestic Policies, Agricultural Performance and World Bank Assistance, 1963-1986," Parts I and II, DRD Discussion Papers, Nos. 273 and 274 (Washington, DC: World Bank, 1987).

28. See Pierre Seka, "Macroeconomic Shocks, Policies, and Performance."

29. See Lele et al., "Nigeria's Economic Development."

30. The primary difference was that Cameroonian cotton producers were paid on time, whereas their Kenyan counterparts experienced substantial delays, in turn reflecting the poor capitalization of the Kenyan cotton parastatals. See Uma Lele, Nicolas van de Walle, and Mathurin Gbetibouo, "Cotton in Africa: An Analysis of Differences in Performance," MADIA Working Paper (Washington, DC: World Bank, 1989).

31. See Uma Lele and L. Richard Meyers, "Agricultural Development," and Uma Lele and Manmohan Agarwal, "Smallholder and Large-scale Agriculture in Africa: Are There Trade-offs in Growth and Equity?" MADIA Working Paper (Washington, DC: World Bank, 1989).

32. See Sidi Jammeh and Chandra Ranade, "Agricultural Pricing and Marketing in Senegal," Working Paper (Washington, D.C.: World Bank, January 1986).

33. See Sidi Jammeh, Mathurin Gbetibouo, Riall Nolan, and Uma Lele, "Agricultural Development in Senegal: Domestic Policies and the World Bank's Role, 1963-88," MADIA Working Paper (Washington, DC: World Bank, forthcoming).

34. See Uma Lele, "Sources of Growth in East African Agriculture," *The World Bank Economic Review*, 3, January 1989, pp. 119-144.

35. See Uma Lele and Steven Stone, "Population Pressure, the Environment, and Agricultural Intensification in Sub-Saharan Africa."

36. See Uma Lele, Robert Christiansen, and Kundhavi Kadiresan, "Issues in Fertilizer Policy in Africa: Lessons from Development Programs and Adjustment Lending, 1970-87," MADIA Working Paper (Washington, D.C.: World Bank, 1989).

37. These rates of subsidies represent averages—for Senegal, they represent the mean for 1970-82; for Cameroon, the mean for 1977-82; for Malawi, the mean for 1983-87. See Uma Lele, Robert Christiansen, and Kundhavi Kadiresan, "Issues in Fertilizer Policy in Africa."

38. See Uma Lele, William Kinsey, and Antonia Obeya, "Building Agricultural Research Capacity in Africa: Policy Lessons from MADIA Countries," MADIA Working Paper (Washington, DC: World Bank, 1989).

39. See Uma Lele and Ellen Hanak, eds., *The Politics of Agricultural Policy in Africa* (Washington, DC: World Bank, forthcoming).

40. In Malawi, the increasing institutionalization of the power of the state as President Banda has aged, together with the growing importance of the technocracy (in part, due to pressure from the World Bank) in the 1980s, have strengthened the planning and implementation capabilities of the Ministry of Agriculture.

Chapter 1

The World Bank's Experience in the MADIA Countries: Agricultural Development and Foreign Assistance

UMA LELE • RAHUL JAIN

Introduction

This chapter examines the World Bank's role in facilitating a broad-based, agriculture-led growth strategy in each of the six MADIA countries since their independence.[1] The framework of analysis is that set out in the Introduction to this volume, which stresses the crucial role of agriculture during the early stages of development; the importance of raising the productivity of a large number of small farmers for ensuring *breadth* in the growth process and generating economy-wide linkages; and the need for a *balanced* accumulation of physical, human, institutional, and technological capital for ensuring such broad-based growth. The following examination attempts to draw connections between the nature of World Bank assistance to agriculture and rural development in these countries and the observed growth in these sectors during the last two decades.

The chapter consists of six country analyses. Each country examination first traces the evolution of the policy advice given by the Bank to the recipient on macroeconomic issues directly pertaining to agriculture, on the agricultural sector itself, and on individual project and nonproject operations. It then establishes the relationship of this advice to the actual pattern of Bank assistance to the country. Both these facets of the Bank-recipient interaction are examined in light of the recipient's performance, endowments, and macroeconomic and sectoral policy responses outlined in the Introduction to this volume. The objective in tracing these developments over time is to assess the impact of the Bank's policy advice and assistance on past sources of growth in each recipient country; to show how well the Bank and recipient governments have learned the lessons suggested by their joint experience; and finally, to derive policy implications for the Bank's future involvement in the MADIA countries. Since the Bank's projects and nonproject loans have frequently been cofinanced by other donors, the analysis of success or failure presented here is broadly indicative of the role of other donors as well.

Overall Pattern of World Bank Assistance to East Africa

During the period 1965-88, total World Bank assistance to Kenya, Tanzania, and Malawi amounted to over $4.4 billion (see Table 1). Support for development of basic infrastructure (i.e., energy, transport, and communications) accounted for nearly a third of total lending. Agriculture and rural development was the second most important category of operations, with a share of slightly over 22 percent (excluding nonproject assistance to these sectors). Thus, in East Africa, the Robert McNamara guideline of allocating up to a quarter of all donor assistance to agriculture was by and large met. In the short span of ten years, nonproject assistance came to acquire a prominent role and comprised a fifth of total Bank assistance to the three countries.

In this period, the Bank approved 80 operations in support of agriculture and rural development in these countries. These included 70 projects and 10 nonproject loans or credits. The Bank's total commitment to these operations was well over $1.6 billion—of which nonproject lending to the sector accounted for a share of nearly 37 percent.

Table 1
East Africa: World Bank assistance by sector (millions of US$)

	Fiscal years 1965-69 Commitments			Fiscal years 1970-74 Commitments			Fiscal years 1975-79 Commitments			Fiscal years 1980-88 Commitments			Country totals (1965-88)			Combined World Bank assistance to Kenya, Tanzania, and Malawi
Sector	Kenya	Tanzania	Malawi	Kenya	Tanzania	Malawi	Kenya	Tanzania	Malawi	Kenya	Tanzania	Malawi	Kenya	Tanzania	Malawi	
Agriculture and rural development	13.50	7.54	11.47	40.50	76.91	24.52	257.00	140.70	50.40	206.60	95.80	92.20	517.60	320.95	178.59	1017.14
(percentage of total)	26.87%	19.74%	34.65%	19.16%	52.30%	61.13%	34.82%	26.86%	38.18%	17.15%	13.72%	17.05%	25.12	22.80%	22.30%	23.05%
Basic infrastructure	28.31	25.35	14.20	139.94	50.55	13.59	210.00	75.70	45.50	428.80	268.80	108.00	806.45	420.40	181.29	1408.14
(percentage of total)	56.34%	66.38%	42.90%	65.92%	34.37%	33.88%	28.46%	14.45%	34.47%	35.59%	38.49%	18.69%	39.13	29.87%	22.64%	31.91%
Industry				5.00	6.00	2.00	57.00	198.00	3.00	36.00	43.00		98.00	247.00	5.00	350.00
(percentage of total)				2.37%	4.08%	4.99%	7.72%	37.79%	2.27%	2.99%	6.16%		4.75%	17.55%	0.62%	7.93%
Other infrastructure				8.30			151.00	35.50	7.00	35.00	26.50	20.00	194.30	62.00	27.00	283.30
(percentage of total)				3.93%			20.46%	6.78%	5.30%	2.90%	3.79%	3.95%	9.43%	4.41%	3.37%	6.42%
Human resource development	8.44	5.30	7.43	18.23	13.60		33.00	23.00	26.10	112.70	25.00	122.80	172.37	66.90	156.33	395.60
(percentage of total)	16.80%	13.88%	22.45%	8.62%	9.25%		4.47%	4.39%	19.77%	8.34%	3.58%	24.26%	8.36%	4.75%	19.52%	8.96%
Nonproject Assistance							30.00	45.00		357.90	206.20	250.00	387.90	251.20	250.00	889.10
(percentage of total)							4.07%	8.59%		20.41%	29.53%	35.56%	18.82%	17.85%	31.22%	20.15%
Technical Assistance								6.00		28.00	33.00	2.50	28.00	39.00	2.50	69.50
(percentage of total)								1.15%		2.32%	4.73%	0.49%	1.36%	2.77%	0.31%	1.57%
TOTALS	50.25	38.19	33.10	211.37	147.06	40.11	738.00	523.90	132.00	1205.00	698.30	595.50	2204.62	1407.45	800.71	4412.78

Source: Adapted from Christine Jones, "A Review of World Bank Assistance to Six African Countries," MADIA Working Paper (Washington, DC: World Bank, 1985); IDA's "Statement of Development Credits," and IBRD's "Statement of Loans," June 1988

During 1975-79, Bank commitments to agriculture and rural development in all three countries soared. In both Tanzania and Malawi, Bank assistance to these sectors doubled over the previous four-year period. In Kenya, the increase was even more spectacular: commitments to the sector rose sixfold—from $40.5 million to $257 million. The number of agricultural projects approved for Kenya and Tanzania also doubled. In both countries, the share of infrastructure, which had appropriated the bulk of Bank funds until the mid-1970s dropped sharply. In Tanzania, while assistance to industry predominated, the share allocated to human resource development—to education, population control, health and nutrition—remained, as in Kenya, very low.

In the 1980s, support for infrastructure has regained center stage together with nonproject lending. The number of agricultural projects approved in Kenya and Tanzania has decreased. On the other hand, there has occurred a significant rise in the number approved for Malawi as Bank assistance to its agricultural sector has risen appreciably over the previous period. The value of commitments as well as the share of assistance to agriculture and rural development in both Kenya and Tanzania have fallen considerably. Despite the Bank's demonstrated willingness to address the problem of human capital development in the 1980s, its reliance on technical assistance has further increased in conjunction with nonproject aid. In Tanzania, human resource development, as well as agricultural research, continues to be neglected. In contrast, funding levels to these activities have improved substantially in Malawi and to a lesser extent in Kenya.

Kenya

Policy Advice

There appear to be stronger conceptual links between the Bank's macroeconomic and agricultural strategy in Kenya than in either Tanzania or Malawi. This reflects perhaps a greater willingness on the part of the government to examine its policies and consider reform in the 1970s. On the other hand, it also draws on the strength and stability of Kenya's policies and institutions as well as the relative absence of structural dislocations in the economy.

Despite these links, some of the most important policy prescriptions that emerged from the Bank's analysis have not targeted those components of the agricultural strategy with the greatest potential for growth. The connection between the Bank's sectoral analyses and its project portfolio has been weak in Kenya, as well as in the other MADIA countries as we show below. Indeed, project lending to Kenya in the 1970s appears to have been influenced by lending pressures from within the Bank and political pressures from within Kenya.

1974 Basic Economic Report. Although the Bank's involvement in agriculture in Kenya dates back to the early 1960s, the 1974 Basic Economic Report was a watershed in its relationship with the country. Issued immediately after the ILO/UNDP report on poverty and unemployment in Kenya and McNamara's famous Nairobi speech,[2] it provided a comprehensive assessment of the first decade of independence. While Kenya's performance up to 1973 was declared to be remarkable in expanding employment and alleviating poverty of the lowest income groups, a pronounced shift in the growth process was foreseen as essential to sustain further advances.

The report presented an excellent diagnosis of the economy and recommended a cohesive macroeconomic strategy in which the development of smallholder agriculture was to be the key to overall economic growth—a position that the Bank has consistently adhered to over time. The strategy envisaged well defined linkages between agriculture and other sectors—the roles of agriculture and industry were deemed to be highly complementary and a switch from import-substitition to resource-based export industries was recommended.

The report stressed the need for allocating a larger proportion of investment, foreign exchange, and skilled manpower to agriculture. It urged the goverment to encourage the subdivision of large farms and to develop a competitive land market. The weakness of the sector planning and implementation capacity was seen as a major constraint in designing effective large-scale programs for the mass of smallholders.

In retrospect, some of the drawbacks of the report can be clearly indentified. It assumed that the critical shortage of agricultural planning capacity could be remedied by simply shifting macro-planners to the Ministry of Agriculture. On the one hand, this underestimated the need for specialized expertise in managing a modernizing agricultural sector. On the other, it skirted the issue of developing local human capital for effective long-term sector and project planning. Further, it called for higher public investments in agriculture through large-scale integrated rural development projects (IRDPs) in contradiction to the Bank's own analyses[3] that had documented the failure of such projects elsewhere. Lastly, the report assumed that new technologies existed for a variety of crops in spite of the fact that an Agricultural Sector Report issued the year before had documented only the availability of maize hybrids (which had been successfully introduced in high potential areas of assured rainfall). In the absence of technical packages, the extension of projects to marginal areas led to disappointing performance—a situation the Bank has faced all over Africa. Yet little attention was paid by donors to establishing national agricultural research capacity in the 1970s.

At this time, the Bank had also taken a pessimistic view of export market prospects for tea and coffee. In the case of tea, for example, it had already adopted in 1973 a policy of financing only rehabilitation of existing productive capacity instead of expansion of acreage (except in circumstances where the tea producing countries had no alternatives) due to perceived conflicts among its various borrowers (e.g., India and Sri Lanka vis-a-vis East African countries). Given long-term demand that was price inelastic, income inelastic, and primarily concentrated in industrial countries, as well as a decline in international prices in real terms, an increase in aggregate production was likely to cause a fall in their individual incomes. As a result, the Bank financed only the development of processing facilities or the rehabilitation of existing tea acreages through infilling. Paradoxically, by providing a market outlet that would not have existed otherwise, these efforts resulted in an expansion of acreage rather than an intensification of existing production.[4] In fact, as discussed in the Introduction, Kenya's robust performance in terms of reconciling growth with equity is explained mainly by its success in shifting to high value export crops like tea and coffee—actions which it took contrary to the Bank's formal advice.

During the period 1974-79, much of the policy dialogue occurred in conjunction with project lending that grew

rapidly due to the emphasis that donors at that time placed on agriculture and rural development. The Bank did not, however, take any further initiative to spell out a cohesive strategy. The annual country memoranda merely commented on short-term economic developments such as volatile international prices and weather-induced instability in production and marketable surpluses that resulted in considerable economic and policy uncertainty.

The Bank recognized the weak analytical capacity for policy formulation within the Ministry of Agriculture as well as the lack of micro-level data for that purpose. Its assistance, however, did not reflect these concerns. It chose to undertake its own activities through expatriate assistance rather than tap whatever expertise was available locally. The Kenya government in its turn was also reluctant to use the considerable number of trained Kenyan personnel who were by then available outside the government.

1982 Basic Economic Report. By 1979 it was clear that implementation difficulties had accumulated over a wide range of projects. The ensuing macroeconomic dialogue increasingly stressed agricultural sector issues. By 1982, the Bank also had a policy mandate to consider lending in support of structural adjustment. The 1982 Basic Economic Report for Kenya therefore recommended revitalizing the sector by "expanding the supply of agricultural land through irrigation, drainage, clearing of forest or dryland farming, switching cropping patters to high value, high labor input crops such as tea and coffee, or intensifying land use through better farming practices and land distribution." The Annex to the report, in contrast, detailed some of the formidable technical hurdles involved in tapping these proposed sources of future growth.

In the area of policy reform, grain market liberalization and the issue of land-titling—both of which eventually became conditions for structural adjustment loans (SALs)—were seen as requiring government action. A general recommendation was made for raising agricultural prices, but no specific suggestions were offered as to the magnitude of price change or the choice of crops or regions that should benefit from such an action. The report gave little indication of an appropriate time frame over which such policy reforms could be realized. In terms of both its technical and policy recommendations, the report was illustrative of the limited ability of the Bank to translate policy advice into practice.

In retrospect, the emergence of macroeconomic difficulties in the late 1970s was a blessing in disguise because it led to the closing down of a number of projects whose economic value was at best marginal. The Bank's attempts to promote sectoral and macropolicy reforms in Kenya in the 1980s were somewhat less successful than in Malawi, because its weak project portfolio had been accompanied by the attitude that failure could almost exclusively be attributed to the policy weaknesses of the governing regime. At a time of economic difficulty, this strained relations. Besides, the timing of certain policy changes turned out to be inopportune—for example, grain market liberalization in 1983 coincided with a severe drought. As a result, the government was less willing to incur any risks entailed by the policy change. One area in which it did concede to the Bank's advice was that of budget rationalization which had a beneficial impact across sectors.

1986 Agricultural Sector Report. Among the new areas of emphasis in the 1986 Agricultural Sector Report were increasing and improving input use as well as the need to strengthen Kenya's limited planning and implementation capacity. The report did not, however, propose an integrated strategy or even a prioritized set of investments.

Given the relative absence of major structural weaknesses or macroeconomic distortions (such as an overvalued exchange rate—as was typically the case in Tanzania and Nigeria) and the lack of enthusiasm of the government for reforms, the Bank appears to have returned to a strategy focusing on research, extension, and the development of human and institutional capital—i.e., issues that were at the heart of project difficulties encountered in the 1970s. In securing some of these changes, import support funds have provided greater leverage to the Bank in the 1980s than did the vehicle of project lending in the previous decade. These efforts now need to be taken further in articulating specific subsectoral strategies for achieving intensification via increased use of fertilizer and other inputs, and for export crop development.

Bank Assistance

In the 1970s, much of the Bank's assistance went to two types of projects: (1) integrated projects with a smallholder focus, and (2) parastatal operated projects involving agroprocessing of export crops such as tea, coffee, pyrethrum, and sugar (see Table 2). With the exception of the tea and coffee projects, these investments in general did not evidence a clear sense of priorities derived from a long-term, analytical perspective with respect to the types of investments needed to modernize smallholder agriculture in the early stages of development.

Agroprocessing projects. In the absence of a well-developed private sector, the Bank supported agroprocessing through parastatals. Making large-scale investments through parastatal channels was far more expedient than directly supporting a decentralized, small-scale agroprocessing sector—for example, in the case of sugar.

The tea and coffee projects in Kenya are the most successful of Bank-funded projects in Africa. Although they focused on processing, they had important effects on smallholder production of tea and coffee.

The first two tea projects, funded in collaboration with the Commonwealth Development Corporation (CDC) in the 1960s, had helped establish smallholder production. In addition, the provision of tea processing factories through a loan of $10.4 million in 1974 alleviated a major constraint in an otherwise well-organized tea sector. Contrary to the Bank's intention of promoting intensification, while acreage and total output grew in response to these efforts, smallholder yields did not. During 1970-85, Kenya's tea production and exports grew at average annual rates of 13.5 percent and 7.4 percent, respectively.

The Kenya Tea Development Authority (KTDA), recognized as one of the most effective institutions in providing smallholder export crop services, owes much of its institutional strength to the assistance of CDC. The Bank, in its turn, has made an important contribution to the analysis and resolution of the KTDA's financial problems caused by the exchange rate losses that followed unanticipated devaluations.

The Bank's coffee project of 1980 also alleviated a major constraint on the development of smallholder coffee. It provided a credit of $27 million for the construction of cooperative factories and the rehabilitation of existing ones. The coffee cooperatives of Kenya have proved extremely successful in servicing the smallholder sector. The Bank has

Table 2
Kenya: World Bank assistance to agriculture, 1965-88 (millions of US$)

	Number of projects	Funding totals	Percentage of total funding	Projects included
Crop-oriented projects				
Tea	3	15.8	3.6%	Tea Development Authority, Second Tea Development, Tea Factory
Coffee	1	27.0	3.6%	Smallholder Coffee
Sugar	2	97.0	12.8%	South Nyanza Sugar, Sugar Rehabilitation
Cotton	1	22.0	2.9%	Cotton Processing
Credit	4	70.2	9.3%	Agricultural Credit, Second Agricultural Credit, Third Agricultural Credit, Fourth Agricultural Credit
Integrated Rural Development	2	66.0	8.7%	Integrated Agricultural Development, Second Integrated Agricultural Development
Extension	1	15.0	2.0%	National Extension
Group Farms	1	15.0	2.0%	Group Farm Rehabilitation
Semiarid Areas	2	19.5	2.6%	Narok Agricultural Development, Baringo Pilot
Irrigation	1	40.0	5.3%	Bura Irrigation
Research	1	19.6	2.6%	National Agricultural Research
Livestock	3	40.4	5.3%	Livestock, Second Livestock, Animal Health Services
Fisheries	1	10.0	1.3%	Fisheries
Forestry	3	60.1	7.9%	Forest Plantations, Second Forestry, Third Forestry
Technical Assistance	2	17.5	2.3%	Agricultural Technical Assistance, Agricultural Sector Management
Nonproject Assistance	3	220.9	29.2%	Program Loan, Second Structural Adjustment Program, Agricultural Sector Adjustment
TOTAL	31	756.0	101.5%	

Source: See Table 1.

further contributed to this excellent performance by addressing the important problem of delays in payments to producers.

For a variety of reasons, the remaining agroprocessing projects have been much less successful. Many were funded in response to the government's concern about equity in regional income distribution, creation of employment, and alleviation of poverty in rural areas. The South Nyanza sugar project (1977), for instance, was located in a drought-prone area. The government raised sugar prices—as recommended by the Bank—when world prices collapsed. Unexpected exchange rate devaluations, on the other hand, caused substantial cost overruns. The Cotton Processing and Marketing Project (1983), also encountered a host of problems not adequately anticipated in project appraisal. These included the lack of adequate research on cotton (due to the depletion of British expertise in anglophone Africa in the 1970s), institutional weakness of the cotton board, unfavorable world market prospects, and unpredictable weather patterns.

Integrated rural development projects. The Integrated Agricultural Development Project (IADP) approved by the Bank in 1976 was modelled on similar large-scale schemes employed elsewhere and proved to be too complex to administer effectively. The Bank agreed to finance the first IADP partly to assist the government in meeting its political objective of equity in regional income distribution. Thirteen institutions and five ministries were involved in the undertaking, and coverage extended over four provinces. In addition to the overextension of human and financial resources of the involved agencies, the absence of proven technical packages was a major factor inhibiting success. Despite the poor performance of the first phase of the project, the Bank approved a $46 million follow-on effort in 1979.

Other projects. The Bank also financed several other miscellaneous projects in support of smallholder agriculture in Kenya. The Bura irrigation project was approved in 1977, with a Bank contribution of US$40 million. This large-scale, capital-intensive project was a costly venture. As was also the case with the capital-intensive South Nyanza sugar scheme, it created relatively few employment opportunities. Despite the skepticism voiced at every phase of project development and implementation, it was justified on the basis of the government's keenness to invest in irrigation in order to relieve land pressure and create employment opportunities in a marginal area. Apart from massive cost escalations, the design of the irrigation system as well as settling the target population in an inhospitable area proved problematic. By 1979, the Bank had begun to seriously doubt the financial viability of the undertaking and even suggested terminating it. The Kenyan goverment, however, was unwilling to incur the political risks of terminating such a visible, high-profile project.

Other activities that proved to be of marginal economic value included the Group Farms and Agricultural Finance Corporation (AFC) credit projects. The Bank's technical staff had serious reservations about the viability of the group farms project prior to approval. The farmers' lack of interest in group farming eventually led to the cancellation of much of the credit.

The Bank supported four self-standing credit projects through the AFC. Since 1967, these have contributed a total of nearly $70 million to Kenyan agriculture. The First AFC

Credit project had been successful in increasing the production of smallholder dairying. Subsequent espansion of credit to AFC greatly overextended its administrative and managerial capability, however, and by 1986 the Bank was being forced to consider alternative credit mechanisms. The AFC projects were, in general, of little benefit to the poor because farmers whose holdings were less than 15 hectares were considered ineligible for seasonal credit in the mid-1970s. At the turn of the decade, the Bank was successful in negotiating a reduction of this limit to 5 hectares—which still excluded the vast majority of smallholders.

In general, most Bank-supported projects in the 1970s appear to have absorbed a disproportionately large share of scarce public resources for activities with marginal rates of return. This restricted the scope for essential complementary investments in agricultural research or human capital development. Contrary to the popular impression that these projects were alleviating poverty in the rural sector, they did not succeed in tackling the roots of long-standing constraints on increasing agricultural productivity, and their impact was low at best. Bank activities in just four subsectors—Bura irrigation, sugar, IADP, and AFC credit (all of which had low rates of return) accounted for at least half of the development expenditure budget of the Ministry of Agriculture during 1977-82. Total gross budgetary expenditures of the ministry increased by 46 percent in these five years—i.e., at an annual rate of nearly 10 percent.

Nonproject assistance. In the 1980s, the Bank's agricultural portfolio has become heavily weighted in favor of nonproject lending. While the first SAL in 1980 did not involve an agricultural component, a second loan/credit of US$130.9 million attempted to address what were thought to be "key" constraints in the sector. Specifically, the second SAL supported reform of pricing and marketing policies, regularization of land subdivision, and the removal of budgetary and management bottlenecks. The Bank was, however, able to elicit only a partial commitment to these reforms from the Kenyan government. Major progress occurred only in one area—that of planning and budgeting in the Ministry of Agriculture, which in turn led to similar reforms in other government ministries.

In recent years, the Bank has moved toward a broader approach to agricultural development in Kenya. In support of general economic and agricultural reforms, it approved two operations in 1986 that demonstrate a more comprehensive vision of future development in Kenya. The Agricultural Sector Adjustment Operation, funded by a $60 million credit, included a major import support component to fund fertilizers and various agricultural inputs. It sought to improve price incentives, reform parastatals, restructure public investment, and increase the flow of credit to smallholders. The Agricultural Sector Management Project credit of $11.5 million relied on technical assistance to strengthen the major agricultural institutions in the public sector. While both programs have addressed issues of critical concern, they have perhaps been overoptimistic about the extent and pace of policy change that the government would be willing to undertake. The multiplicity of initiatives and institutions in their purview may make it difficult to demonstrate successful results in the short-term period as envisaged.

In 1987, after 26 years of involvement in Kenya, the Bank also approved a $19.6 million credit for a national agricultural research project. It has played an important role in coordinating donor support for the project.

Tanzania

Policy Advice

A striking difference between the Bank's analysis of agricultural issues in Tanzania and Kenya has been the relative neglect in Tanzania of factors that promote intensification, as well as a passive stance toward the stagnation in agriculture caused by misguided government policies.

1974 Agricultural Sector Report. The 1974 Agricultural Sector Report correctly identified the constraints on increasing production and observed that the government's equity objectives were being achieved at the cost of growth. The report highlighted the adverse effects of the government's policy of "villagization" on producer incentives and soil fertility and criticized its lack of focus on productivity gains in areas of high agricultural potential.

It recommended a sequential (as opposed to integrated), production-oriented approach to agriculture that in practice would have implied a radical departure from the type of development strategy then being pursued by the government. To achieve major productivity gains, the report recommended a National Maize Project in areas of high potential, to be followed by a National Agricultural Development Program (NADP). Other issues assigned particular importance were the development and maintenance of feeder roads and the promotion of voluntary resettlement in less populated areas of high potential (as a means to relieve pressure) through investment in infrastructure.

Out of concern for Tanzania's national sovereignty, however, the Bank adopted a very cautious attitude in suggesting change along these lines. In fact, contrary to the recommendations of the report, it had already begun funding the preparation of the Kigoma IRDP. Moreover, the National Maize Project approved by the Bank in 1975 did not give priority to high potential areas because the government—for political reasons—desired to spread coverage throughout the country. Moreover, the ability of the Ministry of Agriculture to implement "national" projects was undermined by the government's policy of decentralization. The NADP concept was subsequently abandoned by the Bank and preparatory work commenced on IRDPs in Mwanza/Shinyanga and Tabora, instead.

1977 Basic Economic Report. The 1977 Basic Economic Report dealt very briefly with the agricultural sector and did not address its strategic interaction with macroeconomic development. It provided guarded support to the means by which equity objectives were being pursued by the government. Policies of villagization and pan-territorial pricing—criticized in the 1974 Agricultural Sector Report—were considered to be appropriate instruments for redressing rural poverty.

In contrast to its more critical stance in Kenya, where it had recommended liberalization of the grain trade as early as 1973, the Bank did not press for curtailing parastatals in Tanzania. The proliferation of public sector estates and the nationalization of private ones in the 1970s was not questioned either.

The government's Basic Industries Policy competed strongly with agriculture for budgetary resources and policy attention. In deference to Tanzania's chosen strategy for development, however, the Bank did not oppose this pursuit of capital-intensive, import-substituting industrialization. During 1975-79, the share of industry in total Bank assistance to Tanzania was 38 percent—higher than the

share of any other sector. Over the period 1965-88, the Bank devoted a greater share of its total assistance (i.e., 18 percent) to industry in Tanzania than to any other MADIA country.

As in Kenya, the Bank took a very pessimistic view of Tanzania's export prospects—given volatile commodity prices and other uncertainties in the world economic climate. Prospects for sisal and coffee were considered adverse. Noting that world prices for sisal had been unfavorable since 1969, the Bank recommended a program of diversification out of sisal estates. As a result, the Tanzania Sisal Authority diverted 25 percent of its investments into Bank-funded dairy farming activities—with disastrous results. By the end of the decade, the sisal estate sector had degenerated considerably and a single multinational company became the major source of exports from the country.

As in Kenya, the Bank refrained from financing investments in coffee—Tanzania's most important export crop.[5] In contrast to the successful provision of services to coffee producers in Kenya, the Tanzanian government neglected the sector and its export potential by adopting various discriminatory policies.

Aid coordination meetings in Tanzania had come to a halt in 1977 because the government wanted to block the efforts of donors pressing for policy reform. The Nordic donors, traditionally sympathetic to Tanzania's socialist policies, supported the government's position. By the end of the 1970s, however, the domestic economic crisis facing Tanzania had intensified as a result of various external factors. The breakup of the East African Community, the Ugandan war, a second oil-price shock, and a fall in commodity prices following the coffee boom all contributed to severe balance of payments problems. As a result, the government finally approached the Bank for support.

1983 Agricultural Sector Report. The Bank's project lending experience in Tanzania had elicited abundant evidence regarding the existence of constraints to agricultural growth. As in the case of Kenya and Malawi, however, little systematic macro- and micro-level analysis was undertaken in the Bank to address these impediments. Thus, at the turn of the decade only an imperfect understanding of the growth process in Tanzania existed within the Bank.

In 1981, the Bank approved an export rehabilitation credit of US$50 million. Noting that a more comprehensive effort was needed to address Tanzania's fundamental economic problems, the Bank recommended in March 1982 that the government develop a major program of structural adjustment and financed an advisory group to assist in the task. The 1983 Agricultural Sector Report was prepared as an input into this exercise.

The report argued that Tanzanian policies needed to be reoriented away from an excessive focus on equity and government control and toward growth through private initiative and institutional pluralism. It stressed the need to rectify the budgetary imbalance between industry and agriculture as well as to improve the institutional framework for agriculture by curtailing parastatal activities and allowing for greater private sector involvement. It highlighted the greater productivity of the private sector despite the discriminatory treatment meted out to it during the previous decade. There was also a need to adjust the exchange rate as well as consumer and producer prices.

The report reiterated one of the major themes of the 1974 Agricultural Sector Report—i.e., the need for exploitation of high potential areas of assured rainfall. It identified the Southern Highlands as an area where substantial production gains could be realized. Despite the government's preference for large-scale irrigation as a means of increasing food production, the Bank notably continued to support rainfed agriculture.

Once again, the Bank chose to temper these recommendations. The 1984 Economic Report focused more on external shocks than on any fundamental restructuring geared to revitalizing the agricultural sector.

The single most important constraint to reform in the early 1980s was the reluctance of the government to adjust an excessively overvalued exchange rate. It did begin allocating more foreign exchange to agriculture (as compared to industry) and also raised a number of producer prices. Controls on the grain market trade were partly relaxed. However, the Bank did not approve any agricultural projects in Tanzania after 1982 because it considered these reforms inadequate in the absence of an exchange rate adjustment.

In June 1986, the government devalued the shilling substantially and agreed to eliminate overvaluation by 1988. The donor community perceived this action as a new commitment to policy reform and aid commitments to Tanzania rose. In contrast to Kenya and Malawi, where technocrats have played a greater role, a srongly entrenched and ideologically motivated party has dominated policymaking in Tanzania. Therefore a strong donor posture in support of internal reform and a closer monitoring of the implementation process under way are needed.

Bank Assistance

In the 1970s, the Bank's project portfolio in Tanzania (as in Kenya) focused mainly on: (1) crop parastatals and (2) integrated projects (see Table 3).

Agroprocessing projects. Until 1986, the Bank had provided loans and credits amounting to $261 million to various crop parastatals involved in agroprocessing in the tea, cotton, cashew, sugar, tobacco, pyrethrum, and cereal subsectors. In fact, in the 1970s, it channeled nearly half of its total assistance to Tanzanian agriculture directly through parastatals. The 1983 Agricultural Sector Report concluded that Bank assistance to parastatals had had little positive effect "due to overwhelming institutional and national problems." Furthermore, its contribution to the expansion of the public sector in Tanzania was further augmented by the support of other donors who cofinanced these projects.

The objective of the first tea project in 1972 was to improve processing, handling, marketing, extension, and cooperative services. As in Kenya, the Bank's policy of promoting the intensification of smallholder tea precipitated an increase in acreage instead. A Smallholder Tea Consolidation project followed in 1980. In the period 1970-85, Tanzania experienced a robust annual growth of 13.7 percent in tea production.

The successes of smallholder tea could not be repeated in other subsectors because of crop production failures. Project appraisals in the 1970s did not fully anticipate the full effects of the government's policies toward smallholders that led to either stagnation or decline in the production of most export crops. For example, the Bank financed two cashew processing projects in 1974 and 1978. However, these suffered from a lack of adequate throughput—in part caused by the increased walking distance to cashew groves as a result of the government's policy of villagization. Both

Table 3
Tanzania: World Bank assistance to agriculture, 1965-88 (millions of US$)

	Number of projects	Funding totals	Percentage of total funding	Projects included
Crop-Oriented Projects				
Tea	2	24.8	4.5%	Smallholder Tea, Smallholder Tea Consolidation
Sugar	1	18.0	3.3%	Kilombero Sugar
Cotton	1	17.5	3.2%	Geita Cotton
Credit	2	16.0	2.9%	Agricultural Credit, Rural Development Bank
Integrated Rural Development	3	29.2	5.3%	Kigoma Rural Development, Tabora Rural Development, Mwanza/Shinyanga Rural Development
Tobacco	3	31.1	5.6%	Tobacco, Tobacco Processing, Tobacco Handling
Cashewnuts	2	48.5	8.8%	Cashewnuts, Second Cashewnuts
Maize	2	61.0	11.0%	National Maize, Grain Storage/Milling
Pyrethrum	1	10.0	1.8%	Pyrethrum
Coconut	1	6.8	1.2%	Coconut Pilot
Livestock	3	30.0	5.4%	Beef Ranching, Second Livestock Development, Dairy Development
Fisheries	1	9.0	1.6%	Fisheries
Forestry	2	19.0	3.4%	Sao Hill Forestry, Second Forestry
Nonproject Assistance	4	232.2	42.0%	Export Rehabilitation Program Loan, Multisector Rehabilitation, Agricultural Export Rehabilitation
TOTAL	28	553.2	100.0%	

Source: See Table 1

projects experienced negative economic rates of return and Tanzania's cashew exports fell sharply. Similarly, the tobacco processing and handling projects—aimed at improving services to the tobacco subsector—also generated negative rates of return.

Integrated rural development projects. In the 1970s, the Tanzanian government actively solicited donor assistance for IRDPs. The Kigoma, Tabora, and Mwanza/Shinyanga projects varied in emphasis, but embraced a common multisectoral approach to the development of a geographical area. As in Kenya, the government viewed them as a vehicle for spreading development assistance throughout the countryside, especially to marginal regions and groups. In a decentralized administrative structure, donors were able to channel resources directly to the desired sectors rather than through central ministries. The Bank ignored the messages of its own analyses and responded to the popular mandate of poverty alleviation by investing heavily in this approach. Once begun, the momentum developed by these projects was difficult to curtail. By the end of the decade, virtually every region had been covered by IRDPs funded by the Bank and various other donors, including France, the European Community, the United Kingdom, and the United States.

Most of these projects were prepared through expatriate technical assistance. The government simply did not have the capacity to plan and administer undertakings of such complexity. In contrast to the export crop focus of donor-funded projects in Africa in the 1960s, the IRDPs usually concentrated on food crops in areas of relatively low agricultural potential. Justified on grounds of equity, they often included important social welfare components (such as water supply, schools, and health clinics) that, instead of improving economic productivity, undermined financial and administrative viability. Among the chief pitfalls in using this type of integrated approach were the lack of trained local manpower and a chronic shortage of recurrent financing, as well as of spare parts and fuel. In an atmosphere rife with institutional turbulence, such as that which characterized Tanzania in the 1970s, it is not surprising that the record on project performance should have been so far below expectations; the Kigoma and Tabora projects both had negative rates of return.

Nonproject assistance. The 1981 export rehabilitation credit sought to increase the allocation of scarce resources to the agricultural sector and to improve incentives for export production through a foreign exchange retention scheme for exporters. It also sought to raise producer prices. In the context of an excessively overvalued exchange rate and bloated government expenditures, however, these reforms had little positive impact.

In 1984-85, the government announced a number of reform measures, including the devaluation of the shilling. Official consumer, producer, and input prices were raised to reduce budgetary deficits, and the foreign exchange retention scheme was expanded. The effect of these reforms was shortlived as the extent of devaluation or price rise was inadequate. The foreign exchange scheme continued to discriminate against agricultural exporters in favor of manufacturers.

In June 1986, the government agreed to a major devaluation of the shilling as well as to eliminating overvaluation by 1988. Quantitative restrictions on trade were to be dismantled in favor of tariffs, and discrimination in the retention scheme was to be eliminated. The government also promised to reduce budgetary deficits, to undertake a study of parastatal efficiency, and to further raise producer prices.

In November 1986, after a hiatus of five years, the Bank approved a Multisectoral Rehabilitation credit of nearly $100 million for Tanzania. In January 1988, this was supplemented with another $30 million credit.

Malawi

Policy Advice

Although the Bank recognized in the 1960s that smallholder agriculture was fundamental to economic development in Malawi, this view was not represented in its reports until 1978 (in contrast to Kenya and Tanzania). Economic reports of 1967 and 1973 stressed the shortage of skilled manpower as a constraint on development and urged investments in education and training.

In the 1970s, the Bank was well aware of the dualistic nature of the agricultural sector and the extent of competition rather than complementarity between estates and smallholders in resource use. However, the Bank did not directly address these structural constraints in its policy recommendations as this might have implied a fundamental shift in the government's basic strategy of estate-led growth.

1973 Agricultural Sector Review. The 1973 Agricultural Sector Review acknowledged that the smallholder sector was an important source of financial capital for the estate sector as a result of government pricing and investment policies. The constraints on smallholder development were identified as those related to lack of credit, trained personnel, and marketing outlets. It was assumed that integrated projects could alleviate these. The report also recommended greater smallholder participation in export production through the promotion of smallholder flue-cured tobacco production schemes.

By the end of the decade, there was abundant evidence of the adverse effects of producer pricing policies on smallholder production. The Bank, however, had not yet engaged in urging fundamental policy reform. Its knowledge of the Malawian estate sector remained relatively superficial until the preparation of a detailed report in 1979. It did express some concern via the introduction of a clause in the 1978 National Rural Development Project agreement that set forth both pricing and marketing criteria to which the government was supposed to adhere (but which it subsequently ignored).

1981 Agricultural Sector Report. The 1981 Agricultural Sector Report identified the government wage policy as the chief instrument in promoting the rapid expansion of export crop production through estates. The discriminatory policies toward pricing, marketing, land access, and crop rights reduced the returns to labor in smallholder agriculture. As a result, the estates enjoyed an increasing supply of cheap labor, which in turn kept Malawian tobacco competitive in world markets. Even so, the Bank did not really press the issue. In negotiating the first SAL in 1981, only a pricing methodology was agreed upon with the government.

The government raised prices of export crops in March 1981—i.e., several months before the second SAL was approved. Although the pricing issue appeared to have been settled, the Bank made little progress in addressing other constraints on smallholder production in its policy dialogue. Little had been achieved with respect to its recommendation in 1974 to promote smallholder production of flue-cured tobacco. The report similarly observed that there was no reason why burley tobacco should not be grown on customary (as opposed to estate) land. The lifting of legal restrictions on permitting smallholders to grow burley was, however, made contingent on an analysis of world market prospects. Given Malawi's 26 percent share of the world market, the government feared a possible fall in prices if production of burley rose further. The Bank eventually acquiesced in the government's decision to strictly regulate production levels.

In support of their strategy of estate-led growth, Malawian policymakers have argued that scale economies favor largeholder production of export crops. This is also borne out by evidence from the tea, coffee, and sugar subsectors in Kenya—especially as regards the financial and administrative costs of servicing the smallholder sector. The labor intensity of export crops such as tobacco and tea also puts a ceiling on yields where constraints on labor use[6] are operative for a variety of reasons. In Tanzania, in contrast, technological change in the curing barns reduced the cost of curing tobacco, and smallholder production expanded rapidly in the 1960s (when government services for tobacco growers were better organized). Despite the existence of long-standing constraints, little work has been undertaken by either governments or donors to identify the precise micro-level factors that could improve smallholder yields.

The Bank's Land Policy Study of 1985 disclosed that over 80 percent of the land on established flue-cured tobacco estates remained unutilized. Even as land pressure in the smallholder sector intensified, the licensing of new estates was continuing unchecked. Yet the Bank has been reluctant to assume a tougher posture in addressing either the restriction of rights to grow estate crops or the problem of land distribution in Malawi. This contrasts with its stand in Kenya where it has been considerably more vocal on similar issues.

Bank Assistance

World Bank projects have focused almost exclusively on smallholder development in Malawi. In contrast to Kenya and Tanzania, where assistance to crop parastatals dominated, project assistance to Malawi was directed mainly toward integrated projects (see Table 4).

Integrated rural development projects. The Lilongwe Agricultural Development project, approved in 1968, was the forerunner of a series of IRDPs across Africa. Over the period 1965-88, 12 such projects were implemented in Malawi. These projects absorbed nearly $118 million and accounted for nearly two-thirds of the Bank's total project assistance to agriculture and rural development.

By 1978, the Bank began shifting away from an integrated area development approach, and the first National Rural Development Program (NRDP) was begun. The NRDP involved a modification of the IRDP approach in that it laid more emphasis on the provision of agricultural inputs and farm services than on infrastructure and intensive staffing. Two subsequent phases of the NRDP were approved in 1981 and 1983.

These large-scale undertakings sought to raise the production of smallholder crops such as maize, groundnuts, tobacco, cotton, rice, beans, and potatoes, as well as that of livestock. While the initial Lilongwe projects had focused more on the strengthening of physical infrastructure (such as roads and soil conservation), subsequent area and national projects relied more on input supply, group credit, and extension.

The chief weakness of these projects was the lack of attention to sequencing and phasing of investments. The Bank invested large sums in infrastructure and the expansion of agricultural staff without first ascertaining the

Table 4
Malawi: World Bank assistance to agriculture, 1965-88 (millions of US$)

	Number of projects	Funding totals	Percentage of total funding	Projects included
Crop-Oriented Projects				
Cotton	3	25.50	7.11%	Shire Valley, Shire II and III (integrated projects)
Rice	2	15.81	4.41%	Karonga, Karonga II (integrated projects)
Fertilizer	1	5.00	1.39%	Fertilizer
Credit	2	13.70	3.82%	Industrial and Agricultural Credit, Smallholder Agricultural Credit
Integrated Rural Development	7	76.78	21.41%	Lilongwe Agricultural Development, Lilongwe II and III, NRDP I-IV
Extension	1	11.60	3.23%	Agricultural Extension
Research	1	23.80	6.64%	National Agricultural Research
Forestry	1	6.40	1.78%	Wood Industries Restructuring
Nonproject Assistance	3	180.00	50.20%	Structural Adjustment Loan, Second Structural Adjustment Credit, Third Structural Adjustment Credit
TOTAL	21	358.59	100.00%	

Source: See Table 1.

availability of profitable technical packages for crop production. This was particularly serious in light of the fact that project experience had repeatedly demonstrated the poor performance of crop packages in Africa. In addition to the problem of technological optimism, the IRDPs were dependent upon planning and implementing resources on a scale well beyond what Malawi could provide.

Donor expenditures on infrastructure further induced large budgetary commitments on the part of the government. Once Bank funding was phased out, it was difficult to sustain recurrent costs—especially in the absence of productivity growth. Most of the gains from these investments were appropriated by the government (through its discriminatory producer pricing policy) and reinvested in the estate sector.

In contrast to Tanzania, smallholder agriculture in Malawi has not faced a high degree of institutional instability or macroeconomic policy distortion. However, it has relied more heavily and for longer periods of time on expatriate personnel. Despite the extent and length of the expatriate presence, a large number of well-trained nationals have successfully taken over agricultural management.

The experience with IRDPs consistently highlighted the technological constraints that were inhibiting the growth of smallholder production. Although the Bank was obviously aware of the poor adoption of technical packages, the IRDPs continued to emphasize extension. Despite the number and geographical coverage of area and national projects undertaken, only 6 percent of maize acreage is currently under improved maize—compared to 60 percent in Kenya.

The Bank became seriously concerned about underlying technical problems only in the 1980s. The lack of growth in smallholder production—despite large investments in integrated projects—led to the creation of a new pipeline of projects along with structural adjustment lending. As in Kenya, these projects were designed to alleviate the constraints identified by the lending experience of the previous decade and supported agricultural research, input supply, credit, and extension. At the same time, SALs were employed to address pricing, public expenditure, and subsidy issues.

Every Bank project audited until 1986 in Malawi has generated positive rates of return. A satisfactory record on project implementation due to a favorable administrative environment has undoubtedly contributed to this achievement. It is important to bear in mind, however, that these rates were calculated immediately upon project completion, did not take into account any long-term impact, and were frequently based on inadequate data—due to the subsistence nature of smallholder crops in Malawi.

Nonproject lending. The structural adjustment lending process in the 1980s has focused mainly on the alleviation of price constraints to agricultural productivity. It has led to a significant restructuring of producer incentives for export crops. The Second SAL of $55 million in 1984 and the Third SAL of $80 million in 1985 had substantial agricultural components. These IDA credits attempted to bring smallholder prices for cotton, groundnuts, and tobacco closer to export parity.

The supply response to these efforts has not been as robust as expected. This has been attributed to the lack of micro-level knowledge of factors underlying the slow adoption of improved crop packages and practices. As in Kenya and Tanzania, the Bank has been slow to recognize the need for the systematic collection and analysis of farm management data.

The Bank has stressed diversification of the estate sector in order to achieve stability in export earnings. It has sought to strengthen the efficiency of estates through the provision of management training, extension services, and medium- and long-term credit. The issue of diversification of smallholder production of export crops, however, continues to be neglected. In this connection, the Bank needs to address the problem of licensing smallholder production of tea, coffee, burley, and flue-cured tobacco. Public investments in rural infrastructure, processing, and marketing need to be undertaken (as in Kenya) in order to develop and diversify a smallholder export base.

Although the Bank's policy dialogue with Malawi has been more successful than its dialogue with Kenya, it has avoided addressing one of the most critical agricultural issues in Malawi—that of land distribution. Despite the

findings of the Land Policy Study released by the Bank in 1985, structural adjustment lending has not exerted much influence in this area. In view of the continuous expansion of land under estates, few policy issues are more important to the future of agricultural and economic growth in Malawi.

As discussed earlier, the Bank's agricultural projects contributed to the overextension of Malawi's recurrent public expenditures. A review of the NRDP in 1982 brought to light the budgetary implications of the Bank's investments. Although this was not immediately reflected in new project assistance, the ensuing policy dialogue did address the issue. The SALs pressed for increasing the level of budgetary resources devoted to agriculture, education, and water supply while decrying the need for expenditure on government buildings. Cost recovery was stressed as a means of improving resource mobilization. This eventually led to the removal of fertilizer subsidies—a measure that had a favorable budgetary impact.

The problem of fertilizer subsidies, however, needs to be analyzed from a variety of perspectives. In the course of its project lending, the Bank itself had persuaded a reluctant Malawian regime to introduce subsidies since the process of fertilizer use was still at an early stage in the country. Despite good progress in increasing physical access to fertilizer among smallholders producing maize as a cash crop in Malawi—as shown by the fact that nearly 85 percent of the fertilizer used by smallholders is on maize compared to its two-thirds use on the high value tea and coffee in Kenya—low returns to and high risks in fertilizer use make a strong case for subsidization.[7] Such an argument is valid unless and until other structural factors that reduce the profitability of fertilizer use and the ability of small farmers to undertake risk are alleviated.

Another area of concern has been that of parastatal efficiency. Until recently, the Bank considered the Agricultural Development and Marketing Corportion (ADMARC), the single marketing parastatal in Malawi, to be relatively efficient. Unlike its multiple counterparts in Tanzania and Kenya, ADMARC's ample operating surpluses had masked the need to ensure cost effectiveness. However, a 1981 government decision to raise maize prices by 61 percent precipitated a large accumulation of stocks and jeopardized its finances. A sharp fall in the export price of tobacco in 1985 further aggravated the liquidity crisis. The SALs have initiated a lengthy but successful process of restructuring ADMARC's finances, strengthening its management, and trimming down its various functions.

Overall Pattern of Bank Assistance to West Africa

During 1965-88, total World Bank assistance to Cameroon, Nigeria, and Senegal amounted to nearly $6 billion (see Table 5). Some 39 percent of this went to agriculture and rural development, 27 percent to basic infrastructure, and another 13 percent was accounted for by nonproject loans and credits. Over this period, the Bank approved 71 projects and three nonproject operations in the agriculture and rural development sectors of the three countries.

As in East Africa, the Bank's commitments to the three West African countries rose dramatically during 1974-79 (as

Table 5
West Africa: World Bank assistance by sector (millions of US$)

	Fiscal years 1965-69 Commitments			Fiscal years 1970-74 Commitments			Fiscal years 1975-79 Commitments			Fiscal years 1980-88 Commitments			Country totals (1965-88)			Combined World Bank assistance to Cameroon, Nigeria, and Senegal
Sector	Cameroon	Nigeria	Senegal	Cameroon	Nigeria	Senegal	Cameroon	Nigeria	Senegal	Cameroon	Nigeria	Senegal	Cameroon	Nigeria	Senegal	
Agriculture and rural development	28.16	0.00	10.43	17.00	27.20	20.79	124.00	355.00	47.50	326.90	1239.50	89.50	496.06	1621.70	168.22	2286.0
(percentage of total)	83.54%		41.64%	13.36%	7.13%	32.69%	39.17%	70.02%	30.31%	48.94%	43.00%	14.07%	43.30%	42.40%	19.09%	38.8%
Basic Infrastructure	0.55	65.16	14.62	90.68	192.90	29.19	166.90	0.00	45.6	245.00	603.90	121.80	503.13	861.96	211.21	1576.3
(percentage of total)	1.63%	70.41%	58.36%	71.26%	50.58%	45.90%	52.72%	0.00%	29.10%	36.68%	20.94%	19.15%	43.92%	22.31%	23.96%	26.8%
Industry		6.00			10.00	3.60	3.00	60.00	17.80	15.00	161.00	36.00	18.00	237.00	57.40	312.4
(percentage of total)		6.48%			2.62%	5.66%	0.95%	11.83%	11.36%	2.25%	5.58%	5.66%	1.57%	6.13%	6.51%	5.3%
Other infrastructure	5.00			0.00	8.00		92.00	2.50	41.00	351.30	76.00	46.00	443.30	86.50	575.8	
(percentage of total)	14.83%			0.00%	12.58%		18.15%	1.60%	6.14%	12.18%	11.95%	4.02%	11.47%	9.81%	9.8%	
Human resource development		21.39		19.57	71.30	2.01	18.20	0.00	37.00	30.10	57.30	32.50	67.87	149.99	71.51	289.4
(percentage of total)		23.11%		15.38%	18.69%	3.16%	5.75%	0.00%	23.61%	4.51%	2.00%	5.11%	5.92%	3.98%	8.11%	4.9%
Nonproject Assistance					80.00			0.00			452.00	242.00	0.00	532.00	242.00	774.0
(percentage of total)					20.98%			0.00%			15.68%	38.05%	0.00%	13.77%	27.46%	13.1%
Technical Assistance							4.50		6.30	10.00	18.00	38.20	14.50	18.00	44.50	77.0
(percentage of total)							1.42%		4.02%	1.50%	0.62%	6.01%	1.27%	0.47%	505.00%	1.3%
TOTALS	33.71	92.55	25.05	127.25	381.40	63.59	316.60	507.00	156.70	668.00	2883.00	636.00	1145.56	3863.95	881.34	5890.9

Source: See Table 1.

compared to the period 1970-74). Bank commitments rose sixteenfold in the case of Nigeria, sevenfold in Cameroon, and doubled in Senegal. In Nigeria, most of this increase went to agriculture (raising its share to 70 percent), while the shares of basic infrastructure and human resource development dropped to zero (from 51 percent and 19 percent, respectively, in the previous period). In Cameroon and Senegal, on the other hand, basic infrastructure continued to receive a substantial (but smaller) share of Bank assistance during 1974-79.

During 1980-88, the agricultural sector dominated Bank assistance to both Cameroon and Nigeria—although its share decreased relative to 1974-79 in Nigeria. While the share of basic infrastructure fell in the case of Cameroon, it rose appreciably in Nigeria. Cameroon is the only MADIA country that did not receive any nonproject loans during this period. In contrast, this was the most important category in Senegal—accounting for over 38 percent of total Bank assistance.

Nigeria

The Bank's approach toward Nigerian agriculture has been largely investment-oriented, geared to addressing immediate constraints through the provision of short and long-term technical assistance and the creation of institutional arrangements outside the normal government structure. The absence of appropriate sequencing and phasing in the Bank's rather large agricultural portfolio is particularly well reflected in its emphasis on implementation *before* the development of an effective implementation capacity, on extension before research, and on construction before the development of maintenance capacity.

Policy Advice

The Bank's economic reports on Nigeria have lacked a continuous articulation of the complex interactions between agriculture and the rest of the economy, and their implications for appropriate sequencing and phasing of investments. Little attempt has been made to explore the implications of an oil-based versus an agriculture-led strategy for government policies and for the likely pace and pattern of economic development. In this sense, the Nigerian reports are in sharp contrast to the 1974 Basic Economic Report for Kenya, which strongly articulated the fundamental importance of smallholder agriculture for the *entire* economic development strategy that Kenya was advised to pursue.

Strategic choices: Large farmers versus small farmers. The dominance of smallholders (who account for 90-95 percent of Nigeria's total agricultural output) and the need for intensification have been viewed differently by the Bank and the Nigerian government through the 1970s and early 1980s. The Bank's presence nevertheless has provided a consistent focus on smallholder agriculture in an otherwise unstable and unpredictable environment. This has enabled greater finances to be committed and disbursed to the smallholder sector than would otherwise have been the case. Indeed, in contrast to other MADIA countries such as Tanzania and Kenya, where donor (including World Bank) resources have tended to distort public sector resource allocation in undesirable directions, the Bank has played a more positive role in influencing the direction of agricultural expenditures in Nigeria. The Nigerian government's policies and investments since independence, on the other hand, tended to be biased in favor of large farms until the evident failure of the strategy of direct government production on large farms pursued under the Third Plan (1975/76-1979/80). The continued rise in food prices and increased imports led it to place a greater emphasis on the smallholder sector in the Fourth Plan (1980-85). Nevertheless, the government continued to afford support to private entrepreneurs wishing to set up large-scale agricultural enterprises.

The Bank's smallholder strategy implemented via agricultural development projects (ADPs) since the mid-1970s has largely been motivated by the need to achieve broad-based growth with equity. It has not always been successful, however, in translating this into a long-term commitment by the federal and state governments. Large farmers have tended to be more aggressive in adopting the recommended technology packages. Bank reports have criticized the fact that extension services have tended to work more closely with large farmers, especially in the first three ADPs located in the North, where the social structure and land distribution is more stratified than in the Middle Belt and the South. Besides, the Bank's relatively top-down approach has tended to preclude adequate Nigerian input into the design of appropriate technologies and extension services for small farmers. The Nigerian input has been mainly provided by various federal agencies such as the Federal Agricultural Coordinating Unit (FACU) and the Agricultural Project Monitoring, Evaluation, and Planning Unit (APMEPU), which the Bank helped create in order to support the ADP structure.

Furthermore, the subsidization of large-scale mechanization has been a continuing bone of contention between the Bank and Nigeria in a number of projects. The critical issue of improving mechanical technology for the large mass of small farmers, whose low labor productivity is due in large part to a reliance on the handhoe, has not received much, if any, attention in the Bank's work. The Bank's analysis and lending have focused almost exclusively on the promotion of seed-fertilizer technology as a means to increase yields per hectare under the existing mechanical techniques available to small farmers.[8]

Strategic choices: Export crops versus food crops. The Bank's small agricultural portfolio until the mid-1970s focused primarily on the expansion of export crop production—partly because Nigeria was not perceived to have a food problem in the 1960s. The objective of agricultural policy in Nigeria was to increase the efficiency and competitiveness of export crop production by reducing domestic costs and improving efficiency in the food crop sector that would release land and farmer's time in critical labor peaks.

In 1974, however, the Bank shifted from emphasizing the complementarity between export and food crop production and the need to increase efficiency in overall agricultural production to a strategy focusing mainly on food crops. Projected slow growth in world demand for export crops was now given greater weight, as were the constraints to increasing export crop production. The Sahelian drought, the growth in demand for food, and rising food imports all contributed to the internal political momentum for achieving food self-sufficiency.

After the Sahelian drought, the government gave a high priority to investing oil revenues on large-scale irrigation (while the Bank continued to emphasize rainfed agriculture). During 1973-84, these investments amounted to about 3 billion naira, or 40 percent of the government's total expenditure on agriculture. Given the inadequate govern-

ment capacity to plan and implement these projects and the heavy reliance on external contractors whose services are priced at international levels, it is not surprising that the unit cost of such irrigation has been so high.

Between 1974-79, no agricultural sector work was done on Nigeria in the Bank. Its project assistance nevertheless increased. The shift in emphasis away from export crops meant that constraints imposed by the government's neglect of technological factors, and the dearth of new planting programs for crops like cocoa and oil palm, were not alleviated. By 1979, when the full effects of the oil boom on the agricultural sector had become evident, the Bank concluded that Nigeria had lost its comparative advantage in export crops such as cocoa.

The emphasis on food crop production continued through the statewide ADPs in the 1980s. The focus on food crops and the ADP strategy was reiterated in the Bank's 1979 Agricultural Sector Review and was further reinforced by the joint Government of Nigeria/World Bank food strategy mission convened in March 1980 by the civilian government.

The recent diversion of a small amount of Bank resources for the development of cheaper, small-scale irrigation within the ADP framework has had an important demonstration effect. The key task of creating a capacity within the public sector to plan long-term irrigation development, however, involves the ability on the part of the government to conduct soil and water surveys and to continuously monitor natural resources. The Bank's lack of emphasis on the development of such local human and institutional capacity is especially striking in view of the large external technical assistance component in the high foreign exchange costs of irrigation in West Africa.

The oil slump and the recent macroeconomic and exchange rate reforms in Nigeria are once again leading the Bank to show concern for the production of Nigeria's traditional export crops—in part to meet the growing internal demand for commodities such as cotton and palm oil, and in part to increase export revenues. Noting the excessive share of federal capital expenditures allocated to annual food crops, the 1987 Agricultural Sector Review considered lower investment in food crops to be justified in view of the expected supply response due to new, improved pricing and import policies. The devaluation of the naira and the abolition of marketing boards have raised producer prices and reduced the wage costs in international terms, thereby helping maintain export competitiveness

The review, while stressing the provision of price incentives, did not, however, stress the importance of alleviating the nonprice constraints (relating to technologies, extension, institutions, market information, credit, and infrastructure) underlying poor export crop performance. Nigeria's competitors have superior networks of service institutions geared to export promotion, similar to what Nigeria once possessed. Improving export crop performance will require substantial political commitment from the upper echelons of the federal and state governments, which in turn could be facilitated if the grassroots-level demands of producers were effectively articulated.

Input subsidies. The Bank favored input subsidies until 1975—largely on the ground that they helped to reduce the risk in learning to use new inputs. After 1975, however, the Bank began to voice its opposition to subsidies for any input, particularly fertilizer, in view of its budgetary costs. With the growing black market in fertilizers, its misallocation and sale across Nigerian borders, and high budgetary costs leading to a ceiling on fertilizer imports, the Bank made the phased removal of fertilizer subsidies a condition of the 1983 fertilizer import loan to Nigeria. There was also growing doubt of the efficacy of fertilizer use on traditional crops. In late 1986, however, the government halted the subsidy removal process after the initiation of structural adjustment and the devaluation of the naira. The changed fertilizer-output price relationship and increased concern for maintaining soil fertility in Nigeria led the Bank in turn to adopt a more cautious approach to subsidy removal.

In addition to its opposition to subsidies, the Bank criticized the federal monopoly over the procurement and distribution of fertilizers. Commercialization of these activities were also an important condition of the 1983 loan—one that in contrast to the condition of subsidy removal, the Nigerian government was less willing to implement. It did, however, agree to encourage private participation in fertilizer marketing on a gradual but progressive basis. In line with its modified views on subsidy removal, the Bank now expects the public sector to be involved in procurement and distribution for some time.

Agricultural Research. A striking feature of the Bank's sector analyses and lending has been the emphasis placed on extension relative to research. The Bank is currently working with the Nigerian states to overhaul the extension system and has begun to introduce the "Training and Visit" (T&V) system, in view of the fact that the extension systems existing in the ADPs since 1974 have not been particularly successsful. Despite its otherwise substantial involvement in Nigerian agriculture, the Bank has not been directly involved with the Nigerian agricultural research system. Not much attempt has been made to establish formal links between the ADPs and the research institutes.

Capacity building. The Bank's creation of the entire superstructure for agriculture and rural development via ADPs is a major contribution to institutional development in Nigeria. Similarly, FACU and APMEPU are important contributions to the development of an indigenous planning, evaluation, and implementation capacity. Although Bank reports have continually pointed to Nigeria's deficient capacity in the areas of policy analysis, project planning, monitoring, and evaluation, the Bank has not focused on the necessary task of establishing a long-term capacity within Nigeria (for example, in the Ministry of Planning, or planning units within the Ministry of Agriculture) to tackle the problems of smallholder agriculture. Nor has it concentrated its efforts on increasing the scarce supply of trained manpower by supporting Nigerian institutions of learning and research, or by establishing effective institutions *within* the administrative structure. It must be noted, in the Bank's defense, that the internal demand for capacity building in Nigeria has been weak and the process hindered by the frequent political and administrative changes.

The Bank reports have also continually pointed to deficiencies in Nigerian data and the problems thus created for policy analysis and decisionmaking. The establishment of APMEPU, which was assigned the role of developing data bases for the ADPs, was a major step toward alleviating the problem. By 1983, the Bank and the Nigerian government had spent $15 million in support of data collection efforts. A mid-term review noted, however, that the exercise was too ambitious and not geared to providing immediate feedback to the ADP managers, whose

interest in using the data findings was in any case minimal. The 1987 Agricultural Sector Review indicates that the Bank may be revising its views about APMEPU's role and may be seeking to strengthen the Federal Office of Statistics (the national agency responsible for data collection) instead.

Bank Assistance

The Bank first lent to Nigeria for agricultural and rural development in 1971. During 1970-74, only 7 percent of the Bank's total commitments in Nigeria went to agriculture—for two cocoa projects. On the other hand, basic infrastructure (power and transport) and education together accounted for a 70 percent share.

As in the other MADIA countries, the developments of the early 1970s triggered a sharp acceleration in the Bank's lending for agriculture and rural development in Nigeria. During 1975-79, Bank lending for agriculture and rural development increased thirteenfold over the previous period (1970-74), accounting for 70 percent of the Bank's total commitments to Nigeria. While the Bank did not lend for infrastructure and education (as the government in any case continued to prioritize these sectors in allocating public expenditure), the share of industry also rose from 3 percent in the previous period to 12 percent.

In response to the concerns aroused by the Sahel drought, a strong shift toward food crops and away from the previous focus on export crops occurred in the Bank's project portfolio. Of the seventeen projects approved by the Bank during 1975-79, eight were for food crop development (including seven ADPs and one rice project). Of the remainder, four were for oil palm, and one each for forestry, livestock, and agricultural training.

The most salient aspect of the Bank's lending since 1975 relates to the promotion of the integrated agricultural development approach through the ADPs, as well as to the rapid succession with which new ADPs were approved. Indeed, nearly 60 percent of the Bank's total commitments to Nigerian agriculture (until 1988) went to ADPs (see Table 6). The first three "enclave" ADPs (Funtua, Gusau, and Gombe) were mainly the result of Bank initiative. These were resource-intensive projects employing a relatively large number of expatriates. Their visible impact, combined with the state governments' anticipation of substantial additional funding from the federal government and the World Bank, encouraged their spread among states—leading to a total of 13 ADPs by 1984.

Project assistance slowed down in the early 1980s, as the Nigerian government proceeded slowly on currency devaluation and other macropolicy reforms suggested by the Bank. Another contributory factor was the technological pessimism underlying the mid-term evaluations of the statewide Bauchi, Kano, and Sokoto ADPs in 1985. During 1984-88, only three new projects were approved for agriculture and rural development. This period saw the introduction of the multistate ADPs, the first of which was financed in 1987. By the end of 1989, all 21 states are expected to be included in four such ADPs organized along ecological lines.

As elsewhere, policy-based lending has increased in the 1980s. The 1983 Fertilizer Import Loan of $250 million sought the gradual elimination of fertilizer subsidies and the commercialization of the fertilizer procurement and distribution systems—goals on which progress has been slow and halting. A major trade policy reform loan of $425 million was approved in 1986 that required, among other things, the introduction of an auction system for foreign exchange and the abolition of commodity boards. It aimed at promoting nonoil, especially agricultural, exports (such as cocoa) through improved incentives.

Of the fifteen agriculture and rural development projects audited until 1988, six have had economic rates of return of over 10 percent, six have had negative rates of return, and three (the Ayangba, Lafia, and Bida ADPs) have had rates of return in the range of 0-10 percent. The Bauchi, Sokoto, and Kano ADPs are expected to generate negative rates of return.

Table 6
Nigeria: World Bank assistance to agriculture, 1965-88 (millions of US$)

	Number of projects	Funding totals	Percentage of total funding	Projects included
Crop-oriented projects				
Cocoa	2	27.2	1.7%	Western State Cocoa, Second Cocoa
Rice	1	17.5	1.1%	Rice
Oil Palm	4	95.5	5.9%	Mid-West. State, East-Cent. State, Western State, Nucleus Estate
Fertilizer	1	250.0	15.4%	Fertilizer Import
Agricultural Dev. Projects	15	971.5	59.9%	Funtua, Gusau, Gombe, Ayangba, Lafia, Bida, Ilorin, Oyo North, Ekiti-Akoko, Bauchi, Kano, Sokoto, Kaduna, Multi State I, Borno
Management Training	1	9.0	0.6%	Agricultural and Rural Management Training Institute
Livestock	2	102.0	6.3%	Livestock, Second Livestock
Forestry	2	102.0	6.3%	Forestry, Second Forestry
Technical Assistance	1	47.0	2.9%	Agricultural Technical Assistance
TOTAL	29	1621.7	100.0%	

Source: See Table 1.

Senegal

Policy Advice

The institutional framework for developing agriculture. In Senegal, a plethora of public sector agencies and state cooperatives helped consolidate the government's control over the agricultural sector since the early 1960s. Their functions covered virtually every aspect of agriculture—marketing, input distribution, credit, and extension. Most of these have operated under the guidelines of the *Programme Agricole*, the official action plan of the Senegalese government for the modernization of agriculture.

The Programme assumed that modernization could be promoted through encouragement of more intensive use of the existing technical packages, fungicides, implements, and animal traction. Among the major national institutions supporting the Programme, the *Office Nationale de Coopération et d'Assistance au Développement* (ONCAD)—the chief agency managing agricultural activities in the groundnut sector—was the largest. Its towering presence made it virtually impossible for donors to design projects that could be implemented outside of its institutional framework. By the late 1970s, ONCAD had seriously overextended its administrative capabilities and technical competence, and had accumulated huge financial losses. The Bank's position on the future of ONCAD was never clearly spelled out and the government unilaterally liquidated the agency in 1980—acquiring a debt of FCFA 100 billion in the process.

The government had also established a nationwide network of agricultural cooperatives that came to play a central role in the groundnut system, especially as regards input distribution and marketing activities. However, the dominance of local strongmen in these cooperatives shifted political control toward community leaders rather than toward the state. As had also occurred in Tanzania, the increasing politicization of the cooperative institution coupled with widespread abuse of authority forced the government to embark upon a radical transformation of rural cooperatives in 1984.

A number of rural development agencies also emerged over time. Originally organized around the promotion of specific crops, they progressively developed into integrated rural development agencies with specific regional jurisdictions. Before the Bank commenced its assistance to Senegal (in the late 1960s), only two rural development agencies existed—one operating in the Groundnut Basin, the other in the Fleuve. At the beginning of the 1970s, the Bank began to argue in favor of creating more such organizations that would employ an integrated approach combining extension, credit, and marketing activities. The rural development agencies operated relatively effectively in the early stages of execution of most development programs. With the rapid expansion and diversification of their activities, however, they overtaxed the technical skills and managerial capacities of their staffs. Although rural development agencies were almost totally dependent on donor resources in the early 1970s, they came to increasingly rely on domestic resources for counterpart funds to meet operating and maintenance costs. By the end of the decade, these financing requirements had become unsustainable and the Bank began to withdraw its support to the rural development agencies. Apart from concern about their large operating deficits, the Bank was of the view that their achievements had varied widely depending on the quality of technical packages proposed to the farmers as well as on their overall efficiency. To allow time for the government's own parastatal reform program to work, the Bank delayed action on institutional reform until 1984, after it had become evident that the government's approach was having little effect on organizational deficiencies or the need for financial subsidies. In response to the resulting Bank pressure for urgent and more decisive institutional change, the government launched a phased reduction of the activities and personnel of the rural development agencies in 1984. It envisioned that virtually all their functions (but extension) would be privatized by 1990.

Constraints on raising agricultural productivity. In contrast to the problem of institutional development, the Bank had relatively little influence over sectoral issues in Senegal in the 1960s and 1970s. A consensus has emerged among both donors and policymakers that of the various determinants of agricultural growth, the declining and variable rainfall pattern in Senegal is the single most important constraint to raising productivity. Over the period 1970-86, the country experienced a total of eight droughts and at least five years of untimely and poorly distributed rainfall. These have contributed to the lowering of the organic matter content of soils everywhere. Gradual soil degradation has occurred in much of the vastly populated Groundnut Basin, and the problems of acidification in lower Casamance and of salinity in the Fleuve have adversely affected production potential.

The Bank has consistently attempted to identify the various technological constraints to increasing the production of groundnuts, sorghum, and millets—such as the lack of knowledge of fertilizer responses, the lack of yield-increasing technologies for low rainfall areas like the northern Groundnut Basin as opposed to the southern Sine-Saloum region, and—given labor shortages—overemphasis on land augmenting rather than labor augmenting technological improvement.

The Bank has also recognized that irrigation is one of the major options available to Senegalese agriculture in minimizing dependence on unreliable rainfall. While it has consistently criticized irrigation development because of its high investment costs in West Africa, it funded two irrigation projects in Senegal in the 1970s, covering about 30 percent of the total irrigated area in the smallholder secter in the Fleuve region. This support is insignificant in comparison to the costs of the two large-scale irrigation schemes being undertaken jointly by Senegal, Mali, and Mauritania with the help of France and West Germany. The Bank has not been involved in these irrigation schemes.

Pricing policies and producer taxation. A major agricultural policy dilemma faced by the Senegalese government in the 1970s centered on how to promote the objective of food self-sufficiency through pricing policy without adversely affecting the profitability of export crop (mainly, groundnut) production. On the one hand, there was a need to generate foreign exchange through export crop production. On the other, the government desired to halt the loss of export receipts on rice imports by means of import-substituting food crop production. Given the high projected price of rice, and the conclusion of observers at the time that the country had lost its comparative advantage in producing groundnuts, the government sought to diversify the production of export crops (mainly into cotton) and cereals (mainly into rice). Despite its declared objective to assure security of farm incomes through guaranteed and stable prices, however, it pursued a systematic policy of

taxing groundnut producers with the clear intention of generating fiscal revenues.

In the 1960s, the Bank, concerned as it was about the likely effects that the impending withdrawal of French export price support (which occurred in 1969) would have on public finances, had acquiesced in this policy of taxation. In the 1970s, however, population was increasing at a rate higher than the growth of agricultural production, and the demand for imported cereals (rice and wheat) overwhelmed the demand for traditional rainfed grains (millet and sorghum). As economic performance worsened and rice imports continued unabated, both the government and the Bank became more seriously concerned about food dependence and agreed on the need for an action plan to attain food self-sufficiency. The government committed itself to reorienting consumption toward domestic staples through pricing policy and the development of agroprocessing. Toward the end of the decade the Bank had come to recognize that the existing pricing policies were urban-biased, that the burden of adjustment to lower export prices had been passed on to smallholders, and that rural living standards were stagnating or declining even as the urban population benefited from large wage increases and consumer subsidies

Along with the gradual scaling down of the government's involvement in the economy in the 1980s, the historic policy of producer taxation has now been replaced by one of positive protection that although costly in terms of its maintenance of price floors, is more consistent with the government's declared policy. In 1981-82, the Bank, using the SAL mechanism as leverage, was able to convince the government to raise producer prices. In January 1985, the Bank advised the government to raise the consumer price of rice by 19 percent on the grounds that the government should make consumers pay the price to support domestic grains production. At the government's request, the Bank in 1987 commissioned a comprehensive agricultural pricing study. The extent to which the findings of any such study will be of practical help to Senegalese policymakers will depend largely on how well the lack of reliable statistical data as well as the weaknesses of the statistical department of the Ministry of Agriculture can be overcome.

Input subsidies. Until the early 1980s, the government had provided subsidized inputs and smallholder credit on favorable terms in order to offset the impact of a policy of low procurement prices on farm incomes. It has subseqently begun disengaging from these services.

Past input policies were heavily biased in favor of the Groundnut Basin to the detriment of other crops (especially cereals) and of the outlying regions—and access to these inputs was restricted to members of the state-run cooperative societies. The government had provided fertilizers, groundnut seeds, and machinery—fertilizers being most heavily subsidized. The *Banque Nationale de Développement du Sénégal* financed the costs of the entire input support program from funds provided by France, the European Community's Development Fund and STABEX facility, and the World Bank.

The Bank's position on input subsidies oscillated between one of qualified support to advocacy of suspension of both subsidies and public institutional credit. In the 1960s, the Bank's endorsement of the underlying assumptions of the *Programme Agricole* (especially the adequacy of existing technical packages), as well as the lack of field-level information (especially on fertilizer responses) were probable factors behind its indifference to these issues. Although the Bank had suggested progressive removal of subsidies on groundnuts and millets as early as 1968, the 1970 sector report, recognizing the low income levels of the majority of farmers, indicated a position of cautious support. As fertilizer subsidies increased (averaging more than 75 percent of their cost price in 1975 and 1976), the Bank began to show concern about the financial implications of such a policy and articulated its opposition to subsidies as a general principle. At the Bank's insistence, the government dismantled the institutional credit mechanism in 1981 and the *Programme Agricole* in 1982, but resisted the pressure to lift subsidies on fertilizers until 1988.

Bank Assistance

During 1965-88, the Bank lent Senegal a total of over $880 million, over 81 percent of which comprised IDA credits. A third of this total went for infrastructure—mainly transportation facilities. Agriculture and rural development accounted for a share of slightly over 19 percent—the bulk of which was directed at crop production activities. The livestock and forestry sectors, in contrast, received very little assistance.

The Bank's total project assistance to agriculture and rural development doubled during 1970-74 from the level in 1965-69, and then doubled again in 1975-79. This growth in project commitments has slackened in the 1980s as the importance of nonproject loans and credits has increased sharply. During 1980-88, nonproject assistance has accounted for the largest share (27.5 percent) in total Bank lending to Senegal.

While Bank lending to Senegal has favored agriculture and infrastructure, the government has tilted its investment portfolio in favor of the industrial sector. Until the end of the Third Plan in 1972/73, 44 percent of public investment went into the rural sector. After the Fourth Plan (1973/74–1976/77), however, the share of the rural sector fell by half. Meanwhile, the share of industry increased from 4 percent during the Third Plan to 28 percent in the Fourth Plan.

The Bank projects covered all four regions (the Groundnut Basin, Casamance, Eastern Senegal, and the Fleuve) and have focused on important crops in each region (see Table 7). Consistent with the regional distribution of population, the Groundnut Basin—where two-thirds of the rural population lives—received the highest Bank assistance. In contrast, the Casamance region, which is recognized as a high potential region and has the second highest share of total population after the Groundnut Basin, received the lowest.

The Sine-Saloum Agricultural Development project (approved in 1975) and all subsequent projects were cofinanced by other donors such as France, the United States, and the Kuwait Fund. France's share in the total project cost has been the highest. In fact, in four of the largest agricultural projects undertaken by the Bank until 1986, namely Debi-Lampsar Irrigation, Sine-Saloum Agricultural Development, Agricultural Research, and the Eastern Senegal Rural Development projects, the Bank had the lowest share of project costs in all but one (i.e., Debi-Lampsar).

The Groundnut Basin. Of the five projects funded in the Groundnut Basin, three were mainly credit projects: the First and Second Agricultural Credit projects (1969 and 1973, respectively) which covered most of the Basin and whose aim was to provide credit, extension, and inputs to farmers,

Table 7
Senegal: World Bank assistance to agriculture, 1965-88 (millions of US$)

	Number of projects	Funding totals	Percentage of total funding	Projects included
Crop-oriented projects				
Cotton	1	16.1	4.2%	Eastern Senegal Rural Development (integrated project)
Rice	2	10.0	2.6%	Casamance, Second Sedhiou
Credit	3	32.6	8.5%	Agricultural Credit, Second Agricultural Credit, Sine-Saloum Agricultural Development (integrated project)
Integrated Rural Development	2	3.4	0.9%	Terres Neuves Resettlement, Second Terres Neuves
Research	1	19.5	5.1%	Agricultural Research
Semiarid Areas	1	3.0	0.8%	Drought Relief
Irrigation	5	70.1	18.3%	Senegal River Polders, Debi-Lampsar Irrigation, Small Rural Operations, Irrigation IV
Livestock	1	4.2	1.1%	Eastern Senegal Livestock
Forestry	1	9.3	2.4%	Forestry
Technical Assistance	1	4.9	1.3%	Irrigation Technical Assistance
Nonproject Assistance	3	209.0	54.7%	Structural Adjustment Loan (SAL), Second SAL, Third SAL
TOTAL	21	382.1	100.0%	

Source: See Table 1.

and the Sine-Saloum Agricultural Development project (1975) which was designed to cover about half of the farm families in the Sine-Saloum region by providing extension, seasonal inputs, and farm equipment. Overall, the coverage of these Bank projects in the Basin was extensive. Of the remaining two projects, one was for drought relief and the other for developing small irrigation perimeters for growing fruits and vegetables.

Of the two agricultural credit projects, the first generated a negative economic rate of return. By tying the project's success to ONCAD, the Bank seriously underestimated the extent of political interference that plagued ONCAD's routine management and underlay its poor financial position and persistent inefficiency.

The second credit project, in contrast, earned a rate of return of over 15 percent. This performance was partly due to the favorable weather that made it possible to exceed physical targets and obviously could not be sustained. Another factor was the increased demand and distribution of fertilizer and equipment registered during project operation in 1973-76. After 1976, the delivery system for these inputs collapsed, and these trends could not be sustained.

The Sine-Saloum IRDP generated a negative rate of return. Few farmers adopted the intensification package proposed under the Sine-Saloum project. The project had envisaged the destumping of cleared land, plowing every three or four years, application of rock phosphate, heavier application of compound fertilizer, training of oxen and promotion of ox-drawn equipment to replace light equipment that would be drawn by horses or donkeys. However, at the end of the project period, the area destumped was only 22 percent of the appraisal estimate. Similarly, only 23 percent of the oxen had plowed, and plowing did not significantly contribute to increasing yields, except in maize.

While these projects do not appear to have made a significant contribution to agricultural production in the Basin, it is possible that the situation obtaining in their absence might have been worse. The decline experienced in groundnut production in the 1960s was arrested, although production remained more or less stagnant during 1970-84. The annual growth rate of millet production improved, albeit from a very low base. The performance of the minor crops like maize and cotton (which together occupy only 4 percent of the cropped area in Senegal), on the other hand, was quite impressive. The Sine-Saloum region, which had contributed only 3 percent of total maize production over the period 1960-70, raised its share to 20 percent over 1970-84. Similarly, the Groundnut Basin, which did not produce any cotton in the 1960s, came to account for an 11 percent share in total cotton production over the period 1970-85.

Casamance. In Casamance, two of the three Bank-funded projects (implemented in 1971 and 1976) were designed for rice development and covered about half of the population located in Sedhiou district—a high potential area due to high rainfall. Other donors, for example Germany and China, were also involved in rice development in Casamance. In spite of these efforts, the area under cultivation as well as production of rice declined during 1970-84. The projects were adversely affected by—among other things—the problems of drought and water salinity.

Eastern Senegal. Of the four Bank projects in Eastern Senegal, the Eastern Senegal Rural Development project (1984) is the largest crop-oriented project in Senegal. It focuses mainly on the development of cotton, which accounts for less than 1.5 percent of the gross cultivated area. The cereals component of the project is limited to the extent that cereals are grown in rotation with cotton. During the period 1970-86, cotton production grew at an annual rate of over five percent, with most of the growth occurring in Casamance *before* the project (which included integrated rural development activities in Casamance) was implemented. Over the period 1977-86, however, cotton production was stagnant.

The Fleuve. The two projects in the Fleuve region sought to bring new land under irrigation and to develop rice and vegetable production. The Senegal River Polders (1972) and the Debi-Lampsar (1978) projects brought about 6,340 hectares under irrigation, comprising about 30 percent of total irrigated area in the Fleuve's smallholder sector. These have had a positive impact on rice production—over 1974-86 acreage doubled and production rose sixfold. A third irrigation project (Irrigation IV), costing nearly $34 million, was approved in 1988.

The first two projects suffered from numerous problems, including salinity (which prevented double cropping); the high cost of production of rice at the farm level in spite of high yields for rice; the declining international price of rice; and in general the institutional weakness of SAED (*Société d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal*), the rural development agency responsible for developing agriculture in the Fleuve delta. The high costs of expatriate technical staff and the provision of subsidized inputs has resulted in huge annual losses, and SAED has been continually dependent on government subsidies for recovering these.

Cameroon

Policy Advice

The Bank's dialogue with Cameroon has been much smaller in scope than in Malawi, Kenya, Tanzania, or Nigeria. A major reason for this has been the absence of interlocuters with clear responsibility for the formulation and implementation of agricultural policy in the country. The weakness of the Ministry of Agriculture and the multiplicity of parastatals involved in agriculture has resulted in a policy vacuum in the presence of much institutional competition. Furthermore, the Bank has had a relatively small share in overall aid flows to Cameroon, and much of it has been on harder terms. Cameroon's lesser need for aid due to its better economic performance, as well as its access to other sources of aid, has added to the difficulty of obtaining access to government officials for policy discussion. Not surprisingly, the Bank's analysis of relative priorities that should be accorded to various components of an agricultural strategy has been weak.

1974 Agricultural Sector Survey. The 1974 Agricultural Sector Survey had concluded that the country's agricultural potential was good. The medium-term prospects for Cameroon's main cash crops (cocoa, cotton, palm oil, and rubber) were considered attractive. Although the report observed that available techniques held out the possibility of substantial output increases in both cash and food crops, it nevertheless noted that "research is inadequate." The institutional framework for agricultural planning and development was deemed to be weak. It recommended strongly that the Ministry of Agriculture—created only a year before with the unification of the republic—be strengthened and made the leading institution for overall agricultural development. Management skills were known to be lacking for plantation crops, and concern was expressed about poor extension services that prevented effective communication of improved techniques to small farmers. Lack of coordination, duplication of work, and general waste of scarce resources in the various ministries and development agencies responsible for agriculture were viewed as the chief problems of organization and management.

While recognizing the scope for further expansion of commercial plantation agriculture (in rubber, coconuts, and oil palm), the 1974 report stressed the importance of developing the traditional smallholder sector in order to reduce disparities in regional income. It highlighted the great potential for growth in this sector and the urgent need to formulate pilot smallholder development projects.

The report noted the heavy taxation of cocoa and coffee producers through export levies. Producer prices of these crops remained less than 60 percent of the international f.o.b. prices. Given the sharp increase in fertilizer and other input prices, upward adjustments in producer prices were recommended.

Land tenure was considered a barrier to the consolidation of holdings and was expected to become a more serious constraint on the adoption of modern production techniques. A countrywide system of land registration was recommended, so as to allow the easy transfer of land as well as its use as collateral for credit. This recommendation was not based on analysis of the manner in which traditional land rights affected either the mobilization or productivity of other resources.

The report proposed a five-year investment program, consisting of thirteen projects, with an estimated total cost of about $107 million. Only 16 percent of this was allocated to the estate sector—for a rubber plantation. These projects were intended to result in an appreciable expansion in the production of coffee, cocoa, maize, and rice. Although some perfunctory recommendations were made relating to the organization of the research system, no research project was identified to improve national capacity to develop technical packages.

The Bank's actual assistance deviated significantly from the program proposed in the 1974 report. Over the period 1975-84, 58 percent of the total cost of all crop production projects financed by the Bank was concentrated in rubber and palm oil plantations. This pattern of investment was in line with the government's own public investment program which strongly favored the estate sector. In the Second Plan (1966/67-1970/71), 72 percent of the total allocations to crop production had accrued to estates. The Third Plan (1971/72-1975/76) called for a greater share of funds for the smallholder sector, and allocations to estates declined to 52 percent. Most of the investments in smallholder production, however, were devoted to two projects—SEMRY rice and the cocoa program in Central and South provinces. Over the Fourth Plan (1976/77-1980/81), estates again appropriated the bulk of public expenditures on crop production, accounting for a 62 percent share.

It therefore appears that the Bank's presence in Cameroon in the 1970s was characterized by the absence of a relatively well-articulated strategy toward the development of the smallholder sector. There were no equivalents of the Bank's ADP (Nigeria) or NRDP (Malawi) models. This was perhaps due to the government's own neglect of a coherent strategy. The Bank financed a range of different smallholder projects. Cameroon was last among the six countries to undertake a Bank-funded smallholder integrated development project; the Zapi Rural Development project was approved in 1978. In view of the priority given to estate agriculture by the government until the late 1970s, however, the Bank clearly was an important catalyst in focusing attention on the smallholder sector. The outgrower components of several estate projects were included at its insistence.

As with other donor programs in Cameroon, all of the Bank's smallholder projects were implemented through development companies, which have been either wholly or

partly government-owned. Although the Bank noted and criticized the complexity and duplication of these autonomous agencies since the 1974 Survey, it consistently chose the short-term expediency of using them. This course appears to have been pursued so as to ease project implementation and to achieve relatively quick results. These agencies have helped donors to bypass the difficulties related to the resolution of functional responsibilities within the government, and to avoid the issue of developing the long-term institutional capacity of the Ministry of Agriculture to formulate and implement effective smallholder strategies.[9] Although these agencies have served as the primary channel through which farmers receive extension and credit services, they have been able to reach only a quarter of the country's small farmers.

Following the oil boom, growth in the nonagricultural sectors led to rising urban wages, growing rural-to-urban migration, and general as well as food price inflation by the early 1980s. With projected oil revenues expected to decline in the intermediate future, the Bank once again began stressing the importance of smallholder agriculture and the need for the promotion of traditional crops (including maize and groundnuts) in the forest and highland zones. Most of its policy recommendations, however, continued to be couched in very general terms and were not based on any specific, data-based analysis of the sector.

1983 Agricultural Sector Report. The 1983 Agricultural Sector Report judged that efforts to expand production of traditional export crops (rubber, cotton, cocoa, coffee, and to a lesser extent, palm oil) to levels proposed by the government were unwarranted. It recommended that the government instead focus on consolidating and reducing the basic underlying cost structure for export crop production. Wheat, rice, and soybean production was considered technically and economically uncompetitive with imports. Cereals (other than wheat), groundnuts, and rainfed rice (in the forest and highland zones) were recommended for priority in both research and services (such as credit, input supply, and feeder roads).

The Bank identified the progressive reduction and aging of the agricultural labor force and the absence of planting recommendations appropriate to traditional agriculture as critical constraints on productivity. Animal traction and adaptive research were deemed essential to relieve these. As in Nigeria, the government's mechanization policy was considered misguided. Moreover, the report recognized the lack of information on the economics of estate versus smallholder production.

The prices of cocoa, coffee, palm oil, rubber, rice, sugar, and cotton have traditionally been administered by the government. In the 1980s, the Bank has argued against the increase in coverage of administered prices on the grounds that past interventions have not worked, that markets were generally competitive, and that such interventions increased marketing costs as well as uncertainties about payments and services. Although the importance of price setting and the need for introducing order in the procedure of price formation were recognized, the Bank argued against the government's inclination to cover costs of production. Measures to increase productivity and remove market imperfections were considered the desirable solution.

The high budgetary cost of market interventions was a serious concern. Based on a study undertaken by consultants in 1983, the Bank recommended the removal of input subsidies and reordering of marketing and distribution arrangements to permit a greater role for the private sector in input distribution. This was considered necessary if the budgetary costs of fertilizer subsidies were to be sustained, especially under conditions of increasing ferilizer use. The removal of subsidies, however, needs to be viewed in light of the factors affecting the physical production responses to fertilizer use—a subject on which field-specific data has been conspicuously inadequate.

Recent Bank reports have placed stress upon the Training and Visit (T&V) system although the grounds for this appear to be the promotion of T&V in West Africa as a whole, rather than any country-specific findings. With the recent formulation of the national extension system, the Bank is finally making an attempt toward consolidating and strengthening the institutional capacity of the Ministry of Agriculture. The Bank has also urged the improvement in the agricultural research system. A national agricultural research project with a Bank contribution of $17.8 million was approved in 1986.

Bank Assistance

Bank assistance to Cameroon has been heavily weighted in favor of agriculture and rural development, and basic infrastructure; each of these categories accounted for over 43 percent of total assistance during 1965-88. The shares of other sectors such as human resource development, technical assistance, or industry have been marginal at best, and Cameroon has not received any nonproject loans to date.

During the period 1965-88, the Bank funded twenty-four agricultural and rural development projects in Cameroon at a total cost of nearly $500 million (see Table 8). The share of concessional (IDA) loans in this total has been less than 25 percent. Of the twenty-four projects, twenty (after excluding the National Agricultural Research project) focused on crop production activities; nine of these involved estate production (three of which had smallholder components), and eleven focused on smallholder production. All the estate projects were undertaken in the rubber and oil palm subsectors and accounted for over 35 percent of total Bank assistance to agriculture and rural development in Cameroon. Among the smallholder-oriented projects, six concentrated on integrated rural development, accounting for a 23 percent share. The remaining five involved a specific crop focus—either cocoa or rice. The approval of a large cocoa rehabilitation loan of $103 million in 1988 has increased the share of this smallholder crop from less than 2 percent to over 22 percent in total Bank assistance to agriculture. The Bank's investments in three projects in the irrigated rice sector, on the other hand, straddle the distinction between smallholder and plantation agriculture and have involved highly capital intensive cultivation methods. It is interesting to note that no Bank project has concentrated exclusively on coffee or cotton—the two most important smallholder export crops after cocoa—although some of the IRDPs did include activities related to these crops.

Estate projects. The Bank's involvement in plantation agriculture in Cameroon commenced in 1967 when it assisted the Cameroon Development Corporation with financial rehabilitation, and funded a seven-year program for the estate production of tree crops in the West. This was followed by the establishment of two estates for oil palm production in East Cameroon where, traditionally, it had

Table 8
Cameroon: World Bank assistance to agriculture, 1965-88 (millions of US$)

	Number of projects	Funding totals	Percentage of total funding	Projects included
Crop-oriented projects				
Cocoa	2	109.5	22.1%	Cocoa, Cocoa Rehabilitation
Rice	3	34.7	7.0%	SEMRY Rice, Plaine des M'bo, Second SEMRY
Oil Palm	3	34.6	7.0%	East Cameroon Oil Palm, CAMDEV (Supplementary), Second SOCAPALM
Rubber	3	55.8	11.2%	Niete Rubber, Second HEVECAM, Third HEVECAM
Rubber and Oil Palm	3	86.1	17.3%	CAMDEV, Second CAMDEV, Oil Palm & Rubber Consolidation
Integrated Rural Development	6	113.0	22.8%	Rural Development Fund, Western Highlands Rural Development, Zapi Integrated Rural Development, Northern Province Rural Development, Second Western Province Rural Development, FSAR
Research	1	17.8	3.6%	National Agricultural Research
Livestock	2	27.6	5.6%	Livestock, Second Livestock
Forestry	1	17.0	3.4%	Forestry
TOTAL	24	496.1	100.0%	

Source: See Table 1.

been a smallholder crop. Although both projects achieved modest success in raising production, they suffered from cost overruns and required further Bank financing in 1973 and 1977. The financial problems of the involved parastatals originated in part in the pressure exerted by the government on them to provide—in addition to their commercial activities—infrastructure and public services in marginal areas.

By the mid-1970s, the Bank began emphasizing smallholder development in the context of a nucleus estate approach, as donors realized that estates offered fewer economies of scale than originally foreseen, and were proving to be subject to very high manpower costs which could be avoided in more decentralized production systems. Estates could be used to disseminate technology and cultivation methods to neighboring areas, and then serve as marketing and service centers to the outgrowers. The Bank also began emphasizing rubber development, along with oil palm.

The rubber estate projects approved in the latter half of the 1970s, as well as the subsequent phases of earlier oil palm projects achieved substantial proportions of their physical planting and output targets. The response of the smallholder components, however, was poor. Besides, all suffered from high cost overruns, and by 1982 both the rubber and oil palm subsectors were under severe financial strain. As a result, donors financed a joint consolidation project for the two sectors in order to balance the deficits of the respective parastatals and redress the administrative and technical shortcomings.

Overall, the Bank's project experience in the plantation sector was confronted by several important constraints. First, the lack of adequate micro-level information led to the systematic overestimation of production performance. Difficulties with respect to quality of soils, suitability of terrain, attainable yields, the prevalence of plant and pest diseases, forecasted international prices, and financial stability of parastatal agencies were consistently underrated. Second, ethnic tensions and weak communication links restricted the interregional mobility of labor. Together with the location of estates in sparsely populated areas, these factors led to a chronic shortage of labor as well as high turnover. Third, most of the parastatal agencies involved in plantations suffered from serious management problems, as the Bank did not devote adequate attention to the long-term business of training local managerial personnel.

Integrated rural development projects. In Cameroon, as in the other MADIA countries, the Bank promoted integrated projects in the 1970s—and continues to support these projects even though this no longer reflects its official policy. The Zapi Integrated Rural Development and the Western Highlands projects—both approved in 1978—have used export crop parastatals to promote the development of food crops, and have bypassed ministerial structures, especially the Ministry of Agriculture, in their operations. Similarly, the Rural Development Fund projects in northern Cameroon, designed mainly for the purposes of institution building, paid little attention to the development of local trained manpower within the numerous regional development agencies, and seriously stretched the plausibility of using parastatals for regional policy formulation.

The Zapi IRDP, located in the Eastern province, involved a high degree of complexity in design that required an implementational capacity well beyond what existed then at either national or regional levels in Cameroon. In the first year of operation it was evident that the project could only hope to improve the existing (French) scheme's coverage rather than cover new ground. The project encompassed too many diverse social and economic activities (involving the services of five technical ministries) and most of the components were either abandoned or seriously curtailed in the face of cost overruns. The lack of adequate knowledge of farmers' needs and farming systems as well as organizational and management drawbacks constrained project impact. Limited progress was made in applied research, seed production, the construction and rehabilitation of coffee processing factories, and in the level of staff training in monitoring and evaluation capabilities.

The Western Highlands Rural Development project

emerged from the recommendation of the 1974 Agricultural Sector Survey for a coffee improvement project and an IRDP in the region due to the need for promoting exports as well as "alleviating domestic staple scarcities." Apart from the inclusion of a range of activities such as the provision of rural storage, credit, and water supply, the project sought to strengthen UCCAO (*Union Centrale des Coopératives Agricoles de l'Ouest*), the implementing agency and the apex cocoa growers organization in Cameroon. In particular, its pest control, extension, and seed production services as well as its field trials and demonstrations were to be better supported. Due to implementation problems, however, the disbursement of funds was delayed until 1980. Although the project completion report noted that most production targets had been met, it conceded that the project design had underestimated the obstacles to effective institution building as well as the possibility of conflict between UCCAO and the Ministry of Agriculture over their respective roles.

Crop-specific smallholder projects. Among the first generation of smallholder-oriented projects in Cameroon were the Bank-funded projects for rice in 1972 and for cocoa in 1974. The rapid rise in urban demand for rice prompted the government and donors to invest in irrigated rice cultivation to ensure food self-sufficiency, and to promote employment and higher incomes in relatively underdeveloped regions such as the North. The rice scheme, implemented by the *Société d'Expansion et de Modernisation de la Riziculture de Yagoua* (SEMRY) in 1974, sought to intensify rice cultivation through the introduction of pump irrigation and the rehabilitation of existing irrigation structures. The French expatriate management proved quite effective. Moreover, in contrast to the situation obtaining in some of the IRDPs, strong government support existed for the project at both national and local levels. The project recorded impressive increases in production levels, as yields quadrupled from one to four tons per hectare by 1980. Despite its technical excellence, however, the SEMRY rice scheme has had a high cost structure that renders the output uncompetitive with imported rice. The problem of economic viability underscores the need for reducing transport costs from North to South, as well as increases in domestic demand commensurate with rising production.

The M'bo Plaines Rice project has been a failure as regards *both* its technical and economic aspects. The government's keenness to improve rural income distribution and to achieve better regional development overshadowed the technical problems underlying the scheme. The choice of inappropriate mechanized techniques at its insistence, the problem of soil fragility, and inadequate understanding of agronomic factors all resulted in poor project performance.

Although the Bank had been advocating the development of smallholder cocoa since the early 1970s, it did not employ a consistent strategy to tackle the numerous agronomic and institutional problems confronting the subsector. The cocoa project of 1975 aimed at improving the livelihood of small farmers by rehabilitating existing cocoa acreage and planting new area with high-yielding varieties. It did not, however, pay enough attention to the problem of adoption of the new technical packages, the prevalence of black pod disease, or to the critical labor constraints faced by the farmers. Coupled with erratic government policies toward industry pricing, farm inputs, and credit, these bottlenecks resulted in a negative rate of return for the project. To address these issues, a large $103 million rehabilitation loan was approved in 1988.

Conclusions and Policy Implications

Since the early 1970s, the Bank has consistently supported the development of smallholder agriculture in each of the MADIA countries. Its emphasis on the importance of smallholder agriculture for overall economic development in Kenya; its role in focusing government attention toward the smallholder sector and mobilizing resources for investment in this sector in Nigeria and Cameroon; and, in general, its continuing articulation of policies necessary for agricultural development in each MADIA country have been important contributions. For example, in Nigeria, which has experienced considerable political and policy instability in agriculture, the Bank has been clearly identified as a major source of continuity in upholding the interests of smallholder agriculture and in developing them into a *Nigerian* agricultural strategy. Agricultural performance in countries such as Nigeria and Senegal would in all likelihood have been worse in the absence of support from the Bank (as well as other donors).

Although it has focused its efforts on smallholder agriculture, the Bank has not identified a consistent, agriculture-led strategy for long-term growth in any of the MADIA countries except Kenya. Despite the Bank's impressive research and analytical capabilities, its economic and sector work has not established strong conceptual links between recipients' macroeconomic and agricultural development strategies. Moreover, the Bank's actual lending program and policy positions have sometimes diverged considerably from its otherwise sound sectoral analyses in countries such as Tanzania, Kenya, Malawi, and Cameroon.

In the absence of a long-term vision of broad based growth, an appreciation of the need for balanced capital accumulation, and the appropriate sequencing and phasing of investments that such an analytical framework necessarily implies, the Bank has not paid sufficient attention to strengthening local human and institutional capacity at the macroeconomic or sector level. In countries such as Nigeria and Cameroon, for example, its operations have reinforced institutions *outside* the normal administrative structure instead of strengthening the appropriate policymaking bodies. Despite the Bank's obvious comparative advantage in policy analysis and the articulation of long-term development strategies, its operations have suffered from insufficient knowledge and analysis of location-specific, micro-level constraints on long-term growth. Moreover, it has not made adequate attempts to coordinate donor assistance so that the comparative advantage of donors to undertake specific activities in support of a well-defined long-term strategy could be realized. All these factors have played a role in diminishing the impact of the Bank's many worthwhile developmental efforts. Not surprisingly, with the exception of smallholder tea and coffee in Kenya, there does not appear to be much connection between where

agricultural growth has occurred in the MADIA countries and where much of the Bank's assistance has gone.

The massive increase in Bank assistance to the MADIA countries in the 1970s resulted from broad policy initiatives from top management as well as from external factors such as the international economic environment. These factors had a significant influence on the character of the Bank's assistance for agricultural development—even more so than did country-specific constraints, the Bank's rich operational experience, and the substantial expertise of its staff. The pressure to lend resulted in indiscriminate growth in assistance and in weak project portfolios that clearly did not reflect the positive features of the Bank's macroeconomic and sectoral analyses.

The early 1980s ushered in an era of greater appreciation within the Bank of the nature of the interactions between macroeconomic, sectoral, and micro-level constraints on growth and the need to more directly relate the level and composition of assistance to the existing policy environment. The focus on policy reform has gone a long way in confronting the problem of country policies that discourage growth or that have led to patterns of growth that are insufficiently broad-based. Nonetheless, two caveats must be made about the achievements of this recent policy-based assistance. First, the Bank's ability to encourage countries to undertake changes that they have been especially reluctant to make has been fairly limited—as in the case of grain liberalization in Kenya, exchange rate adjustment in Tanzania, limiting the licensing for estates in Malawi, or the removal of fertilizer subsidies in Senegal and Nigeria. While we recognize that these are extremely sensitive and difficult political issues, we also believe that their importance argues for the Bank to attempt: (1) to search for creative and more effective ways to insinuate these into its policy dialogue; and (2) to make available the highest quality analytical support with which to do the analysis that can serve as a basis for implementing potential reforms.

A second area that has continued to receive insufficient attention in the Bank's policy reform efforts in the 1980s is that of building the capacities of recipient countries for agricultural policy formulation and implementation. We have identified the lack of analytical, administrative, and managerial capabilities as a widespread problem underlying poor project performance. This will continue to be a major bottleneck in improving agricultural performance. The Bank has not been particularly sensitive to this problem, nor is it clear that the Bank has a comparative advantage in developing this capability. We would nonetheless argue that at a minimum the Bank needs to exert its considerable influence as a coordinator of donor assistance to encourage those bilateral agencies with demonstrated comparative advantage in this area.

In general, joint Bank-recipient efforts to modernize African agriculture and fine-tune policies and programs for agricultural growth will need to include:

1. A long-term perspective (15 to 20 years) for articulating the requisite components and the appropriate sequencing of a country-specific agricultural development strategy;
2. A substantial investment in human capital to create a much larger reservoir of trained local manpower to undertake critical analytical, planning, and implementation functions;
3. The building and strengthening of institutions that can provide a range of agricultural services essential for nurturing smallholder development;
4. The creation of considerably more capacity for data collection and analysis to provide essential knowledge of the microeconomic factors that influence producer decisions, on which more informed and effective policymaking needs to be based.

Since the mid-1980s, the Bank has moved toward a more judicious blend of investments and policy reform efforts than was true earlier when one was emphasized to the exclusion of the others. In countries such as Kenya and Malawi, the Bank has moved in the direction of addressing a number of fundamental constraints that have limited its success in the period reviewed. Efforts to improve the quality of agricultural research systems, extension, credit, and marketing services all focus on the problem areas that plagued the effectiveness of Bank projects and programs in the past. Together with the emphasis on an enabling policy environment as well as a strong human resource and institutional base, these efforts should allow the Bank to significantly increase its contribution to future agricultural development in Africa.

Notes

1. The sections on Kenya, Tanzania, and Malawi are based on Uma Lele and L. Richard Meyers, "Growth and Structural Change in East Africa: Domestic Policies, Agricultural Performance, and World Bank Assistance, 1963-1986, Parts I and II," DRD Discussion Paper, Nos. 273 and 274 (Washington, DC: World Bank, 1987); the section on Nigeria is based on Uma Lele, Ademola Oyejide, Vishva Bindlish, and Balu Bumb, "Nigeria's Economic Development, Agriculture's Role, and World Bank Assistance: Lessons for the Future," MADIA Working Paper (Washington, DC: World Bank, 1989); the section on Senegal is based on Sidi Jammeh, Mathurin Gbetibouo, Riall Nolan, and Uma Lele, "Agricultural Development in Senegal: Domestic Policies and the World Bank's Role, 1963-88," MADIA Working Paper (Washington, DC: World Bank, forthcoming); the section on Cameroon is based on a draft MADIA paper by Nicolas van de Walle. Each of these studies in turn has relied heavily on the World Bank's economic and sector work as reflected in Basic Economic Reports, Annual Economic Memoranda, Agricultural Sector Reports, and various project-related documents such as Staff Appraisal Reports, Supervision Reports, Project Completion Reports, and the Project Performance and Audit Reports. Moreover, field investigations, personal interviews, and interaction with the Bank's operational staff also have been invaluable sources of information.

2. See International Labor Organization, *Employment, Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya* (Geneva: ILO, 1972), and Robert McNamara's preface in *The Assault on World Poverty: Problems of Rural Development, Education and Health* (Baltimore: The Johns Hopkins University Press for the World Bank, 1975).

3. See J. C. de Wilde, *Experiences with Agricultural Development in Tropical Africa* (Baltimore: The Johns Hopkins University Press, 1967); Uma Lele, *The Design of Rural Development: Lessons from Africa* (Baltimore: The Johns Hopkins University Press, 1975); and World Bank, "Tanzania Agricultural Sector Report" (Washington, DC: World Bank, 1974).

4. Cash and labor constraints, together with the lack of farm services, have deterred intensification, and it has been more profitable, at the margin, for farmers to expand acreage. See Uma Lele and Manmohan Agarwal, "Smallholder and Large-scale Agriculture in Africa: Are There Trade-offs in Growth and Equity?" MADIA Working Paper (Washington, DC: World Bank, 1989).

5. The European Community did initiate a coffee improvement program that resulted in a modest increase in output.

6. Due to the competing demands of food crop production, the lack of simple labor-saving technologies, and the lack of cash for payment to labor.

7. See Uma Lele, Robert Christiansen, and Kundhavi Kadiresan, "Issues in Fertilizer Policy in Africa: Lessons from Development Programs and Adjustment Lending, 1970-87," MADIA Working Paper (Washington, DC: World Bank, 1989).

8. While the increased use of draft animals is possible in the semiarid North, the incidence of trypanosomiasis restricts their use in the South and underscores the need to promote small mechanical devices to improve productivity.

9. The 1984 Bank report on Cameroon Development Planning Issues concluded that "the state societies have failed to fully play their expected role and have been plagued with managerial problems. Their complex relationship with Government, which finances and controls them, and with other institutions has resulted in cumbersome procedures which reduce operational efficiency."

Chapter 2

Danish Development Assistance to Tanzania and Kenya, 1962-1985: Its Importance to Agricultural Development

ELLEN HANAK • MICHAEL LOFT

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Note

This chapter is an abridged version of a more detailed report, Ellen Hanak and Michael Loft, "Danish Development Assistance to Tanzania and Kenya, 1962-1985: Its Importance to Agricultural Development," MADIA Working Paper (Washington, D.C.; World Bank, 1987). The work has been sponsored by DANIDA as a part of a multidonor endeavor to examine the role of aid in agricultural and rural development in Africa under the auspices of the World Bank research project, "Managing Agricultural Development in Africa" (MADIA). Detailed references to internal evaluation materials are provided in the full report.

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The Danish Aid Program

This study reviews Danish official development assistance in support of agricultural development in Tanzania and Kenya, the two main African recipients of such assistance, between 1962 and 1985.[1] Over these two decades, agriculture—with a quarter or more of the total aid portfolio—has been the single most important sector in Kenya and Tanzania to receive Danish aid (see Figure 3). Although the Danish International Development Agency (DANIDA) has targeted a few main agricultural activities in each country, its overall support for agriculture has been quite diverse. Roughly 60 individual projects and programs cover a broad spectrum of crop and livestock activities, as well as various multisectoral and infrastructural activities closely related to agriculture.

Interestingly, neither the Danish government nor the Danish public considers Denmark an important source of support for agricultural development. Instead, Danish aid is heavily identified with support for social services, health, education, and water supply—whose combined importance has rivaled that of agriculture in both East African countries. This difference in perception appears to be due to the different ways in which DANIDA has approached these two types of activities.

In the 1970s and 1980s, Danida's support was based on its evolving sectoral strategies. These increasingly have included not only a set of guidelines on the types of assistance DANIDA considered most appropriate (such as preventive rather than curative health care), but also a concern that particular projects or programs fit into the country's overall sectoral plans. In agriculture, however, a sectoral perspective was lacking. The content of DANIDA's very diverse portfolio appears to have been determined through "niche identification"—that is, by selecting specific target groups or target activities to support, rather than by carefully analyzing which activities would contribute most to the development of the sector. The informal guidelines on agricultural aid (which have focused on the poorer, more marginal smallholders, including women) only partly account for the composition of that aid. Many activities seem to have been shaped by what the Danish economy had to offer in technology or inputs.

In seeking to assess the contribution of Danish aid to a country's agricultural development, this study takes a broad view of what constitutes success. The question is not only whether a given project has succeeded in its own terms (that is, in relation to its stated objectives, typically having to do with augmenting productive capacity or enhancing living standards in the target area), but also whether it has helped to relieve some critical bottleneck or constraint—whether institutional, technological, or financial. Thus an investment generally regarded as a success may be judged differently in this study. For example, a processing plant or an educational institution may be completed on time and at the planned cost, yet its output may be largely irrelevant for the country's development. Conversely, other investments falling short of their designers' expectations nevertheless might have been just the right effort at the right time.

For readers unfamiliar with Danish aid, this first section provides an overview of the origins and build-up of the Danish aid program, the domestic constituencies that have shaped it, and the administrative guidelines by which DANIDA operates. Section II briefly reviews DANIDA's overall aid programs in Kenya and Tanzania, with data on aggregate and intersectoral disbursements as well as on disbursements by category in the aid budget. Section III is a detailed analysis of Danish aid to agriculture. Section IV draws policy conclusions that may have implications for further assistance to the agricultural sector.

Aid Forms

Denmark's total official development assistance is split 50/50 between *multilateral* and *bilateral* aid. Within the bilateral budget, there is a 50/50 split between *untied grant aid* ("project aid" and "technical assistance" in DANIDA parlance) and *tied soft loans* ("financial aid" or "state loans"). Both grants and loans are restricted to "less developed countries." Since the early 1980s, financial aid has also regularly included *tied grants* for Tanzania and Bangladesh, the two main recipients of DANIDA aid, both of which qualify as "least developed countries" by UN standards. A portion of untied bilateral aid is reserved for *joint Nordic projects*, which are governed by the five Nordic countries together (Denmark, Sweden, Norway, Finland, and Iceland) but are each administered on a day-to-day basis by one of the member countries. Within the multilateral allocation, Denmark has a group of projects known as *multi-bi*, which are administered by a specialized UN agency but draw upon earmarked Danish funds. Danish aid in 1984 exhibited the typical pattern of distribution by type. Untied grants were 35 percent of all aid, or somewhat more than their formula share of 25 percent; Nordic projects accounted for 5 percent of this, or 1.7 percent of total aid. Tied bilateral aid was nearly 22 percent of the total, and multilateral aid was 43 percent—8 percent of which, or 4 percent of total aid, went to multi-bi projects.

Untied grants typically go to relatively small projects (those requiring from several hundred thousand to several million U.S. dollars) with a large technical assistance component and a focus on agricultural or social sectors. Nordic projects share this basic orientation, though they tend to be somewhat larger in financial terms. The tied loans are usually substantially larger (in the range of US$ 10 million) and are geared toward the installation of Danish capital goods. Such projects are typically industrial or agro-industrial, though they also may be civil engineering projects such as urban water systems. The tied-loan projects make use of teams of Danish implementors, who are hired on contract through the private Danish firm that wins the project contract rather than provided as DANIDA technical assistance. Tied grants have consisted mainly of large shipments of commodities produced in Denmark, such as fertilizer. Multi-bi projects resemble the untied portfolio in size and scope.

The Aid Constituency

To a large extent, Danish efforts to assist developing countries are an outgrowth of the political constellations supporting Danish aid. Political factors have determined not only the level of aid but also the forms in which that aid

is allocated, its objectives, and the resource limitations that influence decisions on specific projects. Three types of interests have been paramount: foreign policy interests, philanthropic interests, and commercial interests—in that order of importance and arrival on the scene.

Foreign policy interests provided the initial impulse for the Danish aid program. Multilateral aid to the predecessor of the United Nations Development Programme (UNDP) began in 1949 as a symbolic political gesture, since Denmark was still a net recipient of aid through the Marshall Plan and the World Bank. In the early 1960s Denmark launched its program of bilateral aid as a way of establishing direct diplomatic links with some newly independent countries. In addition, bilateral aid had the potential of engaging popular support through national identification with Danish efforts. Such support was needed to sustain a planned increase in multilateral aid.

Although philanthropic interests had been active earlier through nongovernmental aid activities carried out by various religious and humanitarian organizations, they had little role in changing the Danish political consciousness until the early 1960s, when the foreign policy impetus coincided with the political consolidation of the welfare state. Among governmental leaders, a bilateral venture into official development assistance was viewed as a natural extension into the global arena of the state's policies of domestic equity.

To secure popular support for this policy, the government mobilized the existing humanitarian organizations and integrated them into a massive national campaign to raise private funds for the benefit of the "poor countries," to be matched by state funds. Rarely has a cause received stronger and broader support in Denmark. In early 1962 all the political parties, radio and TV, most newspapers, labor unions, industrial organizations, the cooperative movement, churches, and a string of prominent people inundated the public with pro-aid arguments.

Politically this process climaxed in March 1962, when the parliament unanimously adopted "The Bill on Technical Cooperation with the Developing Countries," signaling the beginning of Denmark's commitment to bilateral aid. The broad parliamentary consensus that marked the passage of this legislation has more or less endured. Even compared with other elements of Danish foreign policy such as security and trade, aid policy stands out as having had an unusually broad political base.

In contrast to the pattern observed in former colonial powers, commercial interests in Denmark were relatively passive players in the early aid program. Agricultural groups' initial enthusiasm for a state initiative to establish model dairy and breeding farms soon waned (in part because the farms failed to generate demand for the export of grade cattle). Since then Danish agriculture has focused on the disposal of surplus produce through *multilateral* programs—a solution that has kept down the pressure for a *bilateral* food aid program.

The involvement of Danish industry remained insignificant until after 1966, when conditions on the tied state loans set up in the 1962 legislation were substantially softened. This was triggered by strong criticism of the Danish aid level at DAC's Annual Aid Review in 1965, after the United States had shown growing concern about allied burden-sharing. At the time, state loans were the only conceivable channel for dramatically increasing disbursements, since the aid agency was already heavily constrained by the lack of manpower needed to administer regular project aid. Thus foreign policy interests again took the lead, and commercial interests followed. The appetite grew gradually with the eating, however, until in 1977 organized industry publicly demanded to assume a larger share of the aid disbursements. Times had changed, and with the general recession in the developed world, Danish industry took the position that since help was needed on the home front, a greater share of aid should be tied.

Incorporating a broad range of interests into an aid constituency has meant that Denmark has been able to rise from one of DAC's worst performers in the mid-1960s to one of the best. Danish aid as a share of GDP reached the goal of 0.7 percent by 1978. In March 1985, parliament passed a resolution asking government to steadily increase ODA from the current 0.77 percent to 1 percent by 1992. These increases have taken place despite a long period of general retrenchment in public expenditures. The philanthropic interests have overcome the government's occasional threats to make small cuts in the aid budget.

At least as remarkable as the level of Danish aid is the stability of its constituency. This has been achieved primarily by giving each of the three major interests a large stake in one form of aid: Multilateral aid continues to secure a high profile for Danish *foreign policy* objectives in international fora; untied grant aid maintains its *philanthropic* momentum thanks to generous appropriations for educating the public about the work DANIDA is doing in recipient countries; and tied aid is linked to the *commercial* interests through procedures of project identification and procurement.

Untied project aid and tied state loans occupy very different positions in the public limelight. Untied project aid looms large in the public mind, whereas tied state loans tend to have a low, behind-the-scenes profile. This is reflected in the public literature disseminated by DANIDA, such as annual reports; the untied project portfolio is given high visibility, while the uses of state loans are mentioned in passing, and this only since the late 1970s.

Guiding Principles

As a result of the broad-based philanthropic support for aid in Denmark, *poverty alleviation* came to dominate the thinking on aid allocations well before the basic needs approach was internationally embraced in the mid-1970s. For untied project aid, poverty alleviation has often been a sieve through which potential projects are run; more and more in the 1970s DANIDA sifted out the relatively well-off areas of a country when deciding which projects to fund. For state loans, intended to export Danish technology, a direct application of this principle to project selection would have put insurmountable obstacles in the way of disbursement, so the principle was applied instead to the selection of countries. The original intention that state loans would be directed to middle income countries, and untied project aid to the poorest ones, was dismissed. In time, state loans went only to low income countries (corresponding to those eligible for IDA credits).

The second guiding principle—*noninterference*—stems from Denmark's small-country status, and its own sensitivity to external compromises of sovereignty. The idea is that the recipient's priorities and strategies should shape the content of Danish aid. In practice, this has been less important for untied project aid, where DANIDA personnel have always been closely involved in design and monitor-

ing, than for state loans, where what is known in DANIDA as the "folded-arm" policy generally persists to this day. On the principle that it was up to recipients to decide what they wanted to use the loans for (within the bounds of what the Danish economy could offer), the aid agency was initially responsible merely for formalizing the agreement between the recipient government and the Danish suppliers, who did their own outreach work. Concern about the effectiveness of these loans has increased DANIDA's direct involvement in appraisal work, particularly since the late 1970s. But a distinction is still maintained between untied projects and tied aid in the degree of monitoring that DANIDA provides, and indeed, in the degree of "ownership" it feels. State loan administrators will maintain, for instance, that DANIDA is not "legally responsible" for the implementation of these ventures, which are only rarely subject to an interim or *ex post* evaluation.

The third guiding principle—arising as it does from the *national self-image*—is more amorphous. It entails asking the question, "what elements of Denmark's own development history could be transferred to those to whom it is giving aid?" The Danish self-image stems from two formative experiences: the agricultural-based grassroots movement in the latter part of the last century and the industrial-based erection of the welfare state in the postwar period. Central to the Danes' perception of what has been the driving force in their own history has been the development of human capital—which is not surprising in a country with scant natural resources.

The paradigms that have emerged from this history have both a *sectoral* focus—on education, agricultural (and especially animal) production, and the development of social infrastructure; and a *cultural* focus—on participatory processes. Channeling assistance through cooperatives, one of Denmark's own democratizing institutions, is favored, as is reliance on other local groups, such as village organizations.

Administration

In keeping with the initial foreign policy impetus of the bilateral aid program, Danish aid continues to be administered under the auspices of the Ministry of Foreign Affairs. As with other bilateral agencies, this arrangement allows for a diplomatic override of the agency's professional judgment in instances where a foreign policy interest may be at stake. Another ramification of DANIDA's position in the Foreign Ministry is that it is strongly inclined to avoid conflict. This is in keeping with what political scientists refer to as the "pilot fish" behavior of small powers such as Denmark. Such a posture runs directly counter to the use of policy conditionality in aid.[2]

Within DANIDA, the composition of the staff reflects a greater domination by regular foreign service officials than is the case in some other bilateral agencies, such as USAID. Virtually all managers come from the ranks of the foreign service, with technical input on project design and implementation being provided by a corps of advisors from professional fields and administrative responsibilities handled by a corps of project officers ("special medarbejdere"). Gradually a few technical advisors have moved into managerial positions.

Two aspects of the staffing of DANIDA have important implications for the aid portfolio. The first is that DANIDA has been chronically understaffed, with increases in staff lagging behind increases in the aid budget. Since unspent funds lapse at the end of each fiscal year, it has been necessary to find efficient methods of disbursing funds. The state loan office has been characterized as the most "disbursement efficient," though in recent years an emphasis on effectiveness has led to sizable increases in this office, which got by with a handful of staff until the late 1970s.

The second and less often noted aspect of DANIDA's staff relates to the professions represented. A high proportion of managers and technical advisors have a background that emphasizes case work, the former in law and the latter in engineering. A natural outgrowth of this orientation is a focus on the *project* level rather than on the program, sectoral, or macro level. Social scientists, whose training provides a more systemic orientation, are relatively underrepresented among the professional ranks, and have typically not been assigned to emphasize sectoral or comprehensive lines of analysis. DANIDA has had very little in-house capacity to view its project activities from a sectoral or countrywide perspective.

DANIDA's knowledge base has of necessity been an eclectic one, with ideas for projects and programs coming from a range of international sources, including the experience of other donors. Within DANIDA, institutionalization of feedback from its own project experience has only recently begun to be systematized with the establishment of an evaluation unit, which in addition to applying standards for evaluation reviews has been formalizing appraisal guidelines. The gradual decentralization to the resident missions in the four main recipient countries—Tanzania, Kenya, India, and Bangladesh—a process begun in the late 1970s, is also affecting the knowledge stream. Not only has DANIDA gained more flexibility in responding to local requirements, it is better able to incorporate in its work the practical experiences of other donors.

Programming Constraints

The main pressure on administrators of Danish aid is to disburse an ever-increasing amount of aid. This pressure is countered, and complicated, by various constraints. First is the *external accountability requirement*. Public reports from the state's Auditor General, in particular, have brought to light implementation problems, including those associated with state loans, that had earlier been outside the scope of inquiry. In the case of untied projects, this has led to pressures to increase the monitoring function of technical assistance and to build up implementing units, parallel to the regular government institutions, that can keep better accounts for the Danish taxpayer. In the case of state loans, the one accountability element that has always been present was a "brick and mortar" ("mur og nagelfast") rule, under which funds were not to go to items that had a resale potential, such as bulk commodities or freighters.

A second constraint is the *written and unwritten rules of tying by source*. The written rules are the basis for the division between the tied state loans and untied project grants. Tying has been justified traditionally with the argument that in its absence, the former colonial powers would have had unfair advantages in getting business from the recipient countries. More recently Denmark has taken the position that it would untie all of its aid if other donors would do so.

When objection arose from the philanthropic interests to the additional costs of the tied aid, the problem was elegantly resolved by the enactment of the principle that tied aid can only be used for those items in which Denmark is more or less competitive internationally (though international competitive bidding is not in fact used to ascertain this). Unwittingly, this principle, combined with the "brick

and mortar" rule, had the effect of eliminating a large pool of those items in which the Danish economy did have an export capacity (Denmark being itself a net capital importer and a commodity and service exporter).

A third constriction of the potential basket of tied DANIDA activities stems from the *personnel constraints* in the administration of state loans. Because DANIDA wants to involve experienced firms that can design and implement large projects (in the interests of keeping DANIDA "disbursement efficient"), the spoils of tying have in practice been limited to an elite group of no more than fifty large export-oriented Danish firms, dealing mostly in state-of-the-art technology, which have the surplus to invest in exploratory field visits.

The rule that applies to grant aid, which is in principle untied, is an unwritten one. Practice does not, however, fully accord with principle. With some standard exceptions (like vehicles, which Denmark does not produce), any hardware that is needed preferably should be purchased in Denmark.[3] From a strategic point of view, what is more important than the possible variance with an internationally competitive price is the element of self-selection that accompanies project design; in fact, it is difficult to get a project with a substantial hardware component approved if the items needed are not produced (at a "reasonable" cost) in Denmark.

The other unwritten rule of grant aid relates to the use of technical assistance, recruitment of which is generally limited to Denmark, or at most Scandinavia—with the obvious effect that projects (which typically have a technical assistance component) must be designed to conform to the Danish labor market. Among other things, this puts constraints on the types of agricultural projects that DANIDA can approve, given the short supply of agricultural economists and crop specialists available to DANIDA. The same principle applies to fellowships.

Finally, disbursement flows are constrained by the *selection process for recipients*. As noted, poverty criteria have been applied rather rigidly to determine which countries are eligible for state loans.

For the administratively intensive untied grant aid, DANIDA has found it advantageous since the early 1970s to concentrate on a few main recipients, which together receive more than half of all Danish bilateral aid. The considerations that led to the inclusion of the two East African countries in this group, and the broad characteristics of the Danish aid portfolios in these countries, are the subject of the next section.

Aid to Tanzania and Kenya

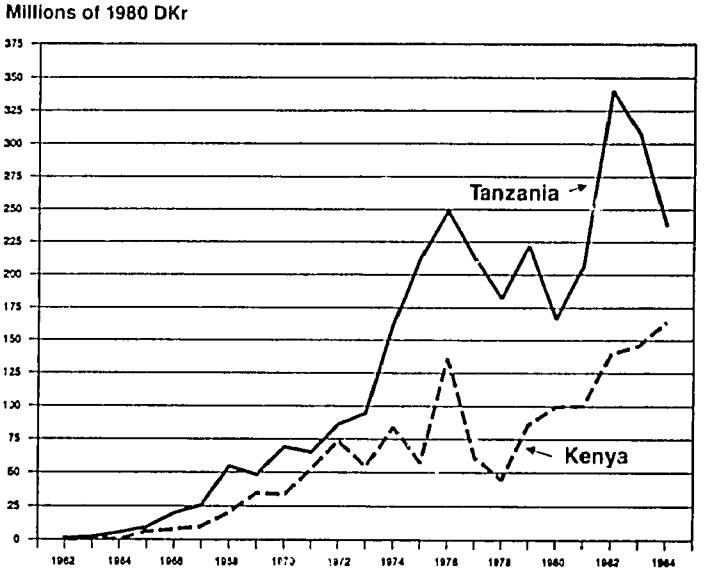
Country Selection

It is probably more correct to say that Tanzania and Kenya chose Denmark than vice versa. The two countries were among a larger pool of potential bilateral aid recipients that Denmark approached at the beginning of the 1960s. Ghana had been at the top of this list, and Nigeria was another option. Neither worked out, as far as can be gleaned, because they did not take Denmark seriously as a donor, hardly responding to the official query. Tanzania, in contrast, responded with an elaborate project proposal (the Kibaha Educational Center) when approached about the possibility of a joint Scandinavian project, beginning a relationship with Denmark which would become increasingly amicable over the years.

The reasons for Kenya's selection were less clear-cut. A brush with a francophone country (a Red Cross hospital in Zaire) had convinced Danish aid administrators that a main recipient had to be anglophone. Scandinavian Airways (SAS) had opened up a flight connection to Nairobi. Jomo Kenyatta had attended a Danish international folk high school, and Tom Mboya had toured Scandinavia on behalf of the Kenyan cooperative movement. Kenya joined Tanzania and Uganda in the partly Danish-inspired East African Community.[4] Perhaps the most important reason, however, suggested by several of the key actors at the time, was rather more romantic. A Danish author, Karen Blixen (better known outside of Denmark as Isak Dinesen), had been one of many Danish settlers in Kenya, and had managed through some of her works to establish a sentimental bond (admittedly unilateral) between her wide readership and Kenya. Fittingly, the first Danish project in Kenya was the restoration of her former farm building and its conversion into Karen College, a school for home economics teachers.

A reference to the total disbursements to the two countries (Figure 1) reveals the evolving profile of their aid relationship with Denmark. Until the early 1970s, both received much the same level of emphasis in the DANIDA portfolio. From 1973 on, Tanzania emerged as the favored country, receiving in some years more than twice as much aid as Kenya. In the early 1980s, the large jump in Denmark's aid to Tanzania[5] was in contrast to the already

Figure 1
DANIDA disbursements to Tanzania and Kenya, 1962-84 (in constant 1980 DKr)



Note: Amounts for 1978 represent disbursements over nine months (April-December).
Source: Hanak and Loft, "Danish Development Assistance," MADIA Working Paper.

declining trend of most other major donors. Denmark, too, decreased its real aid disbursements to Tanzania in the mid-1980s. Aid to Kenya has shown a slower but steady increase in real disbursements since the relationship began.

The difference in the pattern of assistance to these two countries has had a lot to do with the political basis of support for Danish aid in general. Tanzania's rhetoric on the primacy of welfare considerations meshed very well with the Danish philanthropic interest in aid; Nyerere himself came to be perceived as a kind of social democrat, not an unfortunate perception in the era of Social Democratic hegemony in Denmark. Kenya, meanwhile, encountered what could almost be called public disapproval in the 1970s, with various groups in the philanthropic lobby actually suggesting that aid to Kenya be discontinued. The image problem stemmed from perceptions of Kenya as an "affluent society," where the government and the upper classes were unconcerned with basic needs and poverty.

In trying to summarize the impact of these impulses and perceptions on the administration of aid to the two countries, one might think in terms of greater or lesser laissez-faire regarding the precise use of Danish funds. The basic orientation of the Tanzanian government was regarded with approval, so it was entrusted with more aid decisions. In Kenya, DANIDA took a more active role as the initiator of projects and the guardian of a focus on poverty. A concrete manifestation of this difference was the greater attention DANIDA paid to the selection of geographical areas and target groups in Kenya than in Tanzania.

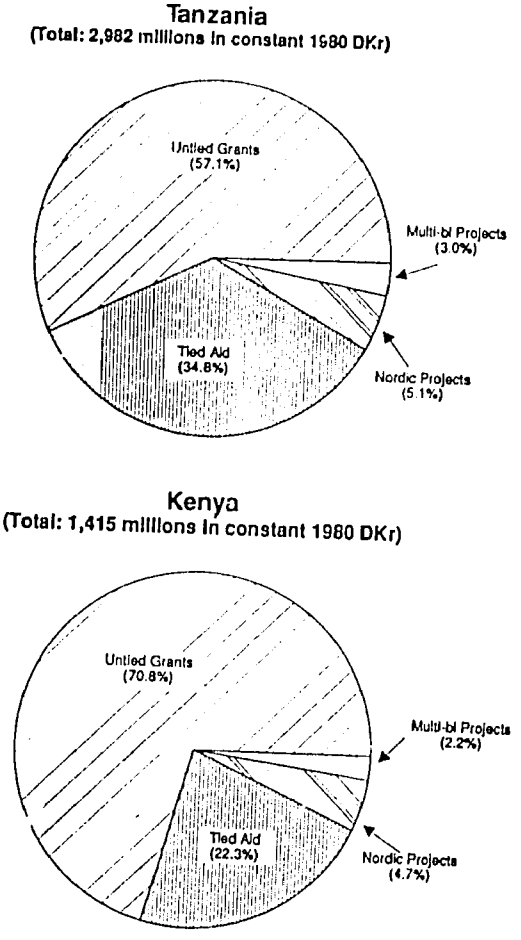
In programming terms, the laissez-faire quality of DANIDA's approach to Tanzania was heightened by the fact that Tanzania also became a major recipient of state loans during the 1970s. Danish industry benefited from the general goodwill toward the country, getting approvals for largely unscrutinized investments in industry (cement) and agro-industry (sugar). In Kenya, however, DANIDA was for a time reluctant to push for large state loan agreements because of some early experiences that went against the grain of Danish ethics. This difference is reflected in Figure 2, which indicates the share of the various aid forms in total disbursements to the two countries. Since the early 1980s, Denmark has become more critical of Tanzania's policy environment and more questioning about its use of aid funds, although Tanzania still counts Denmark among its "friendly donors."[6] It has also become explicitly concerned with addressing production problems—an area that DANIDA had relegated to the backseat in the 1970s, when its image was that of a leading supporter of social infrastructure.

The Recipient View

Not surprisingly, Denmark has been a more important donor for Tanzania than for Kenya—not only because of the amount of aid disbursed (it has provided 6.9 percent of total ODA to Tanzania and ranked fifth among donors for the period 1970-84), but also because of the strong signals it sent out of fundamental sympathy with Tanzanian ideals and approaches. As keen managers of their country's relations with different donors, Tanzanian officials were able to recognize the Danish enthusiasm for social infrastructure programs, and they let the Danes know that they looked to them for a major contribution in this area.

Denmark has been less significant in Kenya (ranking

Figure 2
Total DANIDA aid by form 1962-84 (in constant 1980 DKr)



Source: Hanak and Loft, "Danish Development Assistance," MADIA Working Paper.

tenth among donors for 1970-84 with 4.9 percent of total ODA). As a result, Kenyan officials have a somewhat more vague concept of what Danish aid might offer. The Kenyan government always has been amenable to proposed poverty-oriented projects, however, since attention to issues of regional distribution has been an important part of the official Kenyan platform since the early 1970s.

During the recent economic crisis, the two governments have reacted quite differently to Danish aid. The Kenyan officials interviewed indicated that overall fiscal management has constrained their acceptance of aid-financed loans, even on terms as soft as the Danish state loans (86 percent grant element). This may help to explain the slow pace with which DANIDA has been able to negotiate new loans, now that it has a renewed interest in building up a Kenyan loan portfolio. But, the same expenditure rationalization program has led the Kenyans to welcome the addition of grant aid to items on the recurrent budget (such as maintenance). The Kenyans have praised the Danes for their flexible approach to this matter.

In Tanzania, all Danish aid is now on a full grant basis. Denmark (together with the other Nordic countries) has distinguished itself in *not* joining the pack of bilateral donors who put pressure on the Tanzanians for an agreement with the IMF. Yet, although Denmark has certainly

been less harsh in its criticism of government policies than most other major donors, the fact that it has expressed *any* criticism came as a surprise to the Tanzanians, who saw this as the beginning of a more hardline approach. Disappointment set in not only about a cutback in aid, which occurred when Tanzania refused to rechannel some Danish project aid in support of imports in conflict with its own stated policy of structural adjustment, but also about Danish refusal to provide massive support to the sugar and cement industries without certain policy conditions.

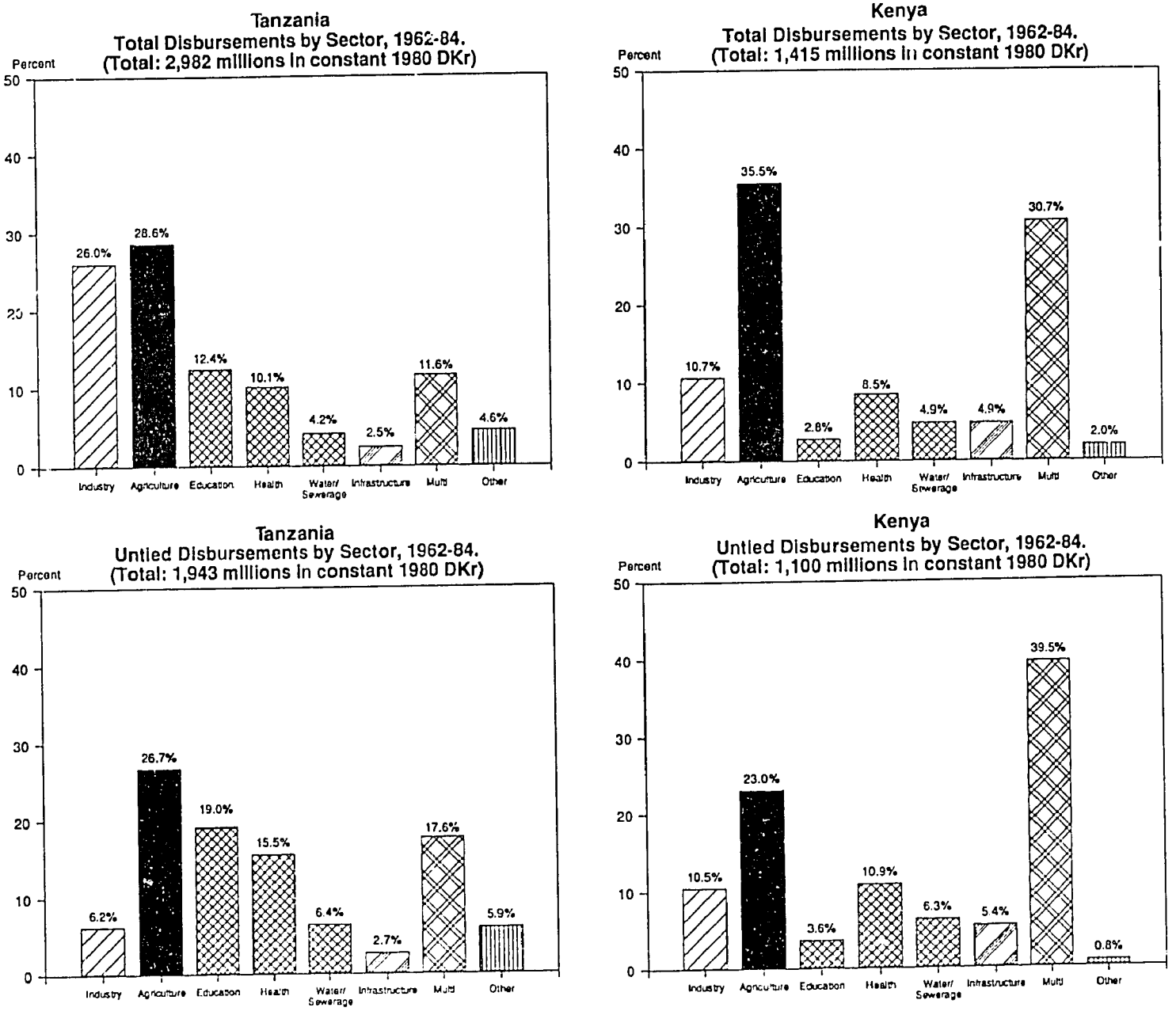
Sectoral Patterns

Drawing on a detailed database on DANIDA disbursements found in the main report of this study, this section briefly describes the intersectoral composition of the aid portfolios to the two countries.

In Figure 3, the charts at the bottom show formally untied aid (also known as "project" or "grant" aid); those on the top cover total aid (including state loans and multi-bi activities). Both sides of the Figure reveal the importance of agriculture—which accounted for a quarter or more of each country's portfolio—in Danish assistance programs. But the charts also reveal some important *distinctions*. The sectoral breakdowns of those on the bottom correspond quite closely to the type of agenda set out by Denmark's philanthropic proponents of aid: a focus on the rural poor through smallholder projects, and support to a range of social services. Indeed, DANIDA's combined support to Tanzania's social services (health, education, and water) amounts to 41 percent of its untied aid to that country.

The data in the two upper charts are more likely to be of

Figure 3
DANIDA aid to Tanzania and Kenya by sector, 1962-84



Source: Hanak and Loft, "Danish Development Assistance," MADIA Working Paper.

interest to the recipient countries and to the rest of the donor community, who have less reason to distinguish among aid types the way Denmark does. These charts are significantly larger: by 30 percent for Kenya, and by 50 percent for Tanzania. It should be noted that the apparent larger concentration in the Kenyan portfolio toward agriculture rather than on multisectoral activities is somewhat deceptive—since many if not most of the multisectoral disbursements are directly related to agriculture (the largest two items in this category being technical assistance and a project known as the Rural Development Fund). The Tanzanian portfolio, however, alters character completely when loans, too, are included: industry is on a par with social services, closely rivaling agriculture for first place. The difference hinges on the *end uses of state loans* in the two countries. In Kenya, the loans went almost exclusively to agroprocessing. Though this was also a facet of the Tanzanian loans, their primary focus was on industrial investments—specifically in cement.

Aid to the Agricultural Sector

Comparing the Two Country Portfolios

The aggregate figures in the preceding section give the impression that agriculture fares about the same in Tanzania as in Kenya. Probing below the surface, however, one comes away with a very different impression. Although there are some similarities at the level of individual project activities, the overall differences are pronounced.

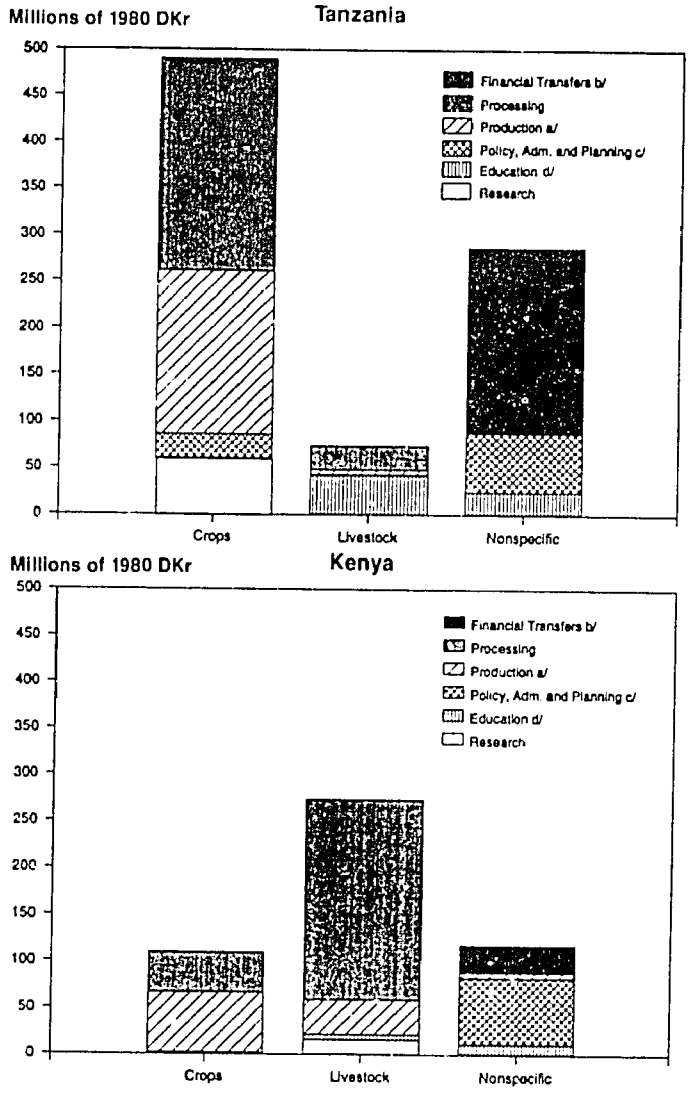
Foremost among these is the pattern of intrasectoral allocations. Agricultural activities are grouped by their primary *product* focus and summarized in Figure 4 within the product groups, by their *functional orientation*. These categories are by no means the only way one might slice the data ("extension," for example, often appears among functional breakdowns of agricultural aid), but given DANIDA's aid patterns, they provide us with some workable aggregates. In comparing the two figures, the reader should note that *the scales are different*, reflecting the smaller overall size of the Kenyan program.

The first striking observation concerns the livestock sector, which accounts for more than half of total DANIDA aid to Kenya, but only a tenth of that to Tanzania. Within the livestock area, there is a difference in functional focus. Tanzania has received some processing investment (in dairy), but the more important activity has been education—specifically, support for a veterinary faculty at the agricultural university. By far the most funds in Kenya have gone to agroprocessing (in the dairy and meat industries), with sizable amounts to promoting smallholder production and research.

Crop activities clearly dominate the Tanzanian portfolio, accounting for well over half of total resources. The functional orientation of both these and the nonspecific activities in the two countries is somewhat similar, with substantial aid going to crop processing (sugar or grain), financial transfers (to the smallholders' development banks), administration (principally to the renowned Nordic Cooperative Projects), production (especially input supply), and education (support to each country's principal agricultural faculty). Tanzania also received a fair amount of support for crop-related research through a Nordic project administered by Finland.

One needs to look beyond these functional aggregates, however, to get at another difference between the two country programs. The far larger disbursements to Tanzanian crop and nonspecific activities mask the fact that the Kenyan program has required much greater administrative resources from DANIDA. Most of the Tanzanian program came in the form of "bulk aid"—large shipments of chemical inputs and large checks to the rural development bank. Even certain of the projects (like the above-named

Figure 4
DANIDA agricultural aid to Tanzania and Kenya by product and function, 1962-84 (in constant 1980 DKr)



a/ Includes only activities directly aimed at increasing output.

b/ Not called "credit" because it includes financial support to banks' own on-lending capital.

c/ Includes support to the development of institutions such as cooperatives, as well as to the planning and policy analysis capacity of recipient agencies.

d/At post - secondary institutions.

Source: Hanak and Loft, "Danish Development Assistance," MADIA Working Paper.

Nordic research project and the National Food Strategy project, which falls under the policy category) were more in the character of bulk aid from the standpoint of DANIDA's administrative input, since they involved little else than signing over checks and an occasional site visit or briefing. The Kenyan program has required much more regular, on-the-ground presence. As will be argued, this has had some important consequences for aid effectiveness—both at the level of individual activities and in the wider sense of giving DANIDA a better knowledge base from which to go forward with portfolio development.

It would appear that some of this difference in administrative intensity had more to do with Danish sensibilities regarding the two countries than any inherent differences in their need for close scrutiny. When Kenya came to be suspected in Danish pro-aid circles of "questionable motives" on the issue of income distribution in the early 1970s, DANIDA's response was to concentrate increasingly on the poorer segments of the population; in practice, this added to the need to scrutinize the details of aid activities in Kenya. In contrast, Tanzania's overall policy framework (or at least its expressed goals) was considered fully appropriate from the standpoint of Danish concerns about appropriate target groups. This, in turn, probably led to greater confidence that Tanzanian allocation procedures would be appropriate as well.

Important as Danish attitudes to the two recipient countries were, certain characteristics of their agricultural sectors may have played a role in the *selection* of activities—and have certainly played a role in the relative *effectiveness* of these activities. For the purposes of the analysis that follows, it is useful to note two types of characteristics: 1) those relating to the resource base, and 2) those relating to the sectoral and macroeconomic environment. The first is of fundamental importance to the appropriateness of the means and objectives of aid interventions (for example, one must know what the resource constraints are for a particular target group in order to help raise its income-earning potential). The second is essential not only in shaping the incentive structure for individual farmers, but also in determining the extent to which project assistance is a viable form of intervention under prevailing economic and institutional circumstances. These issues can only be summarized briefly here; for a fuller treatment the reader is referred, inter alia, to Part I of a companion paper from the MADIA study.[7]

The resource base. Although agricultural performance in the two countries is linked to the policy environment, the resource endowments themselves have certainly affected the options. Though Tanzania and Kenya are neighbors and grow many of the same crops (coffee, tea, cotton, pyrethrum, maize, wheat, rice, and sugar, among others), their resource bases differ. The primary distinction regards the availability of arable land. No precise comparisons can be made,[8] yet it seems clear that Kenya's land resource base is marked by far sharper dichotomies than Tanzania's. Comprising only a small portion (4.2 percent) of Kenya's total area, high-quality land (zones I and II) nevertheless seems more abundant in that country than in Tanzania. These are the areas where high-value coffee, tea, dairying, and pyrethrum do best. In Kenya, such areas (and crops) have enjoyed dramatic increases in productivity and output since independence. They lie essentially in Central province, and in the higher elevated and better watered portions of Eastern, Rift, Nyanza, and Western provinces.[9] In Tanzania, high-quality land exists in pockets in the northeast near the Kenyan border (Moshi, Arusha), in parts of Kagera in the northwest, and in the Southern Highlands (portions of Mbeya region and Mbinga district). Dramatic growth also took place in these areas in Tanzania in all the activities noted above except dairying, but it began to trail off by the early 1970s.

Tanzania has much vaster tracts of what is typically called medium-quality land (zones III and IV), suitable for rainfed annual cropping of various food crops, cotton, tobacco, and certain perennials like cashew and sisal. This type of land was in many respects the engine of growth in Tanzania in the 1950s and 1960s, when cotton, tobacco, and cashews registered impressive performance through expansion of the area under cultivation. In Kenya, nearly 60 percent of what has been classified as arable land, or about one-fourth of the total land area, is clearly marginal in character—that is, semiarid, or arid—with considerable uncertainty for rainfed agriculture. Cash-cropping in the few medium-potential areas of Kenya (mostly cotton and cashew) never took off in the same way as in Tanzania. By the 1970s, however, the situation in Tanzania also took a turn for the worse, in some cases with quite dramatic declines in output.

It is more difficult to compare the dynamics of food crop production, given the high proportion allocated to subsistence or marketed through unofficial channels. Kenya's medium-potential areas (especially in Rift Valley) and high-potential, well-watered areas of Western province experienced a dramatic increase in productivity with the introduction of hybrid maize in the mid-1960s. Tanzania's Southern Highland regions (Mbeya, Rukwa, Ruvuma, and Iringa) have registered a more recent (late 1970s) and as yet less complete revolution, probably of a more extensive character than in Kenya.

The livestock sectors of the two countries are also quite different, inasmuch as Kenya has had the resource base in the high potential areas to develop a very advanced, monetized dairy industry based on grade cattle, stall feeding, and regular purchases by the dairy cooperative network. In the Tanzanian highlands, there are traces of a similar dairy economy, though on such a small scale that the output is essentially for the local market. Most of Tanzania's medium-potential agricultural areas are unsuitable for cattle because of tsetse infestation. In both countries, the bulk of cattle is kept in an entirely different economy: barely monetized indigenous herds tended by pastoralist and agropastoralist groups in the semiarid stretches of Kenya's Rift Valley, Eastern, and Coast provinces, and of Tanzania's Central Plateau. So far little has been done in either country to draw these groups into the market economy.

In relation to future prospects, population factors will play an important role. In Tanzania, the highlands are already quite densely populated and intensively farmed, but the medium-quality areas seem to offer considerable potential for expansion at the extensive margin. This may well be the only viable option at the moment for expanding production, since most of the improved technologies so far available have increased yields but little, typically at the expense of increasing risks. The stumbling block to expansion at the extensive margin is in part an administrative one, in that the present location of many villages prevents the farming population from moving out onto unutilized land.

In Kenya, population densities in the highlands are extreme, and population pressure has been pushing more and more cultivators onto marginal soils for which there are few known technologies. Because of this severe land crunch, coupled with a population growth rate of about 4 percent a year, Kenyan officials have been gravely conscious of the need to create employment in the process of encouraging further growth.[10]

The concentration of Kenyan land resources in a relatively small and for the most part contiguous portion of the country has not been without its advantages from an administrative and infrastructural standpoint. With most of its surplus-producing land spread out over a vast area, Tanzania's agricultural economy has suffered to a far greater extent from high transport costs and from breakdowns in the marketing and transport systems. Indeed, transport costs for moving maize from the main surplus areas in the Southern Highlands of Tanzania to the population centers have been nearly prohibitive, whereas in Kenya maize can be moved with relative ease, and at reasonable cost, from the surplus areas west of Nairobi to town. In addition to these natural advantages in Kenya, the colonial heritage left the country much better endowed with both physical and administrative infrastructure. This is attributable both to the important settler-based commercial farming economy of the colonial period and to the colonial government's strategy for coping with the state of emergency under Mau Mau during the 1950s, when it added substantially to the transportation network in smallholder areas, particularly in Central province.

Sectoral and macroeconomic characteristics. Among the many issues that fall under this heading, two related ones merit special attention: 1) the *overall incentive structure facing smallholder farmers* (centering on real producer price levels as they pertain at the farm gate); and 2) *the predictability of institutions providing services to the agricultural sector.* Both factors set the context in which donors try to operate. For a small donor like DANIDA, which has defined its role primarily in terms of project assistance, this sectoral environment has enormous impact on the likely chances for success. Yet precisely because such small donors have *not* perceived themselves to be in the business of offering sectoral policy advice, the policy environment has not been consistently assessed or understood.

Neither Kenya nor Tanzania has had an unequivocally positive structure of farm-related incentives across the full spectrum of commodities produced. Yet it appears clear that for many commodities (including coffee, tea, and dairy) the Kenyan government's policies relating to incentives have been geared toward allowing capital accumulation to take place at the farm level. By contrast, through a combination of explicit sectoral pricing policies and increasing implicit taxation through the rise in marketing margins and appreciation of the real exchange rate since the early 1970s,[11] Tanzanian farmers witnessed steady declines in the real purchasing power of most commodities—with the exception of a group of inferior "drought" staples and legumes, and of "preferred staples" like maize, which began to have an attractive unofficial market price by the end of the decade. Dramatic nominal price adjustments during the 1980s could barely keep pace with Tanzania's official rate of inflation, however, and the extreme scarcities of consumer goods in the countryside made that index questionable in any event. Increasingly, only the remoter areas that enjoyed subsidized transport costs continued to find that the official system offered "incentive prices" for commodities like maize. By the 1980s, moreover, the problem had taken on clear macroeconomic dimensions; exchange rate overvaluation meant that the government could not pay higher prices to farmers without running higher deficits to finance the marketing authorities.

A major part of the decline in incentives in Tanzania was related to the unpredictability of the marketing system rather than to the price-setting process *per se*. A series of changes, first reducing the scope of cooperatives, next replacing them completely with parastatal marketing authorities, then partially reintroducing cooperatives in the early 1980s, had the result in most places of worsening, rather than improving, the dependability of marketing channels. During the 1970s, Tanzanian farmers were less and less able to count on timely transactions (while waiting time further reduced the real value of the commodities to producers). The Kenyan marketing system on the whole has appeared more stable from an institutional standpoint, but similar stories of soaring marketing margins and increasingly delayed payments could be told about large parts of it—most notably cotton, but also pyrethrum and cashews.

With respect to other institutions providing services to producers, the Kenyan system would appear to be the far more predictable one. Not only did Tanzania's farmers themselves go through a dramatic institutional reorganization with the "villagization" process of the mid-1970s; so did the officials whose job it was to interface with them. Since 1972, the chain of command for Tanzanian extension officers has shifted from the Ministry of Agriculture to the Regional Development Director, in some cases to Crop Authorities, and then back to the Ministry. At one point additional officers (village managers) were appointed to serve thousands of villages. Retail trading has been affected first by the short-lived nationalization of the import business in the late 1960s, and subsequently by two campaigns to establish village shops (and close private ones) in 1976 and 1980.

On balance, it seems clear that the Kenyan agricultural environment has been more conducive for the conduct of project assistance than has the Tanzanian environment. This is not to say that inappropriate types of project assistance would work in Kenya; but in Tanzania even "sound" projects have had a much harder time staying afloat in the midst of the institutional turbulence and the deteriorating incentive structure—factors that were outside the influence of project managers. It also seems that the heightening macroeconomic crisis that Tanzania has experienced since the end of the 1970s has compounded the difficulties of project assistance. The business of living has put such extraordinary demands on government and parastatal officials that the capacity of their institutions has come under severe stress. Similar problems emerging in Kenya with the onset of recession in the 1980s appear to pale by comparison.

Against this background, we can now take a closer look at the components of DANIDA assistance to the two countries. We focus on two areas in which Denmark has a leading role, livestock activities and cooperatives. This is followed by brief discussions of activities in production, financial transfers, crop processing, and indirect support to agriculture through transportation infrastructure and industrial import support. Activities omitted here—such as research—are discussed in the full report.[12]

Livestock Activities

Overview. Livestock production holds a special significance in the Danes' economic development history, and therefore has loomed large in the country's self-appraisal of its aid potential. The main characteristics of present-day Danish agriculture were shaped in the second half of the last century. Livestock began to dominate the agricultural sector when crashing international grain prices spurred Danish farmers to convert from grain to animal production. The change had widespread and long-lived economic, social, and political ramifications. For decades, livestock farmers have been supported by an impressive research and extension system (as well as favorable prices), with the result that dairy and pork products continue to be major commodity exports.

Despite its early disappointments in the aid business with dairy/breeding farms, the Danish livestock industry has managed to maintain a significant presence in DANIDA's agricultural activities, representing the bulk of technical assistance and administrative input. With a few small exceptions in poultry and pig rearing, livestock promotion through the aid program has centered on cattle. This emphasis is reflected in the East African portfolios.

The Kenya program has been far more significant financially and has covered a wider range of functional activities than the Tanzania program. In contrast to some other donors who have run large programs to develop the dryland, pastoral cattle economy, DANIDA has focused primarily on the highland, grade cattle, dairy economy. Its approach has had two main thrusts.

First and financially most significant have been the periodic *investments in dairy processing* through state loans to the Kenyan Cooperative Creameries (KCC), the national dairy processing company. The combination of these loans plus several export credits for the same purpose have made DANIDA the dominant donor to KCC. KCC has also been the beneficiary of a number of fellowships for training in dairy management in Denmark.

Second are activities in research, education, and production, which have mainly been oriented toward *improvements in smallholder dairy farmers' performance*. So far the main focus has been on tick control, which has been approached through cattle dip rehabilitation projects in several districts and acaricide resistance research (acaricide being the active ingredient used in the cattle dips). More recently, this has been supplemented by some extension work in fodder crops.

The education component (technical assistance to the Naivasha Dairy School), though small, has been significant for DANIDA's program because it provided the link between these two branches of support to the dairy industry. DANIDA-affiliated agronomists working at the school were sparked to take a more active interest in the use of state loans to dairy processing. As a result DANIDA commissioned a Dairy Master Plan in 1979, which brought more sectoral considerations into the appraisal of future investments with KCC. This feedback process is especially noteworthy because it is the only case in the two portfolios where active integration of project and state loan aid policy could be identified from an *ex ante* vantage point.

In addition, DANIDA has provided investments in *meat processing*, which encompass the offtake of the dryland cattle economy. Modern butcheries have been provided both under a state loan in the mid-1970s (Halal Slaughterhouse, Ltd., outside of Nairobi) and under project aid in the early 1980s to eight publicly managed district slaughterhouses. The project's objectives were primarily related to public hygiene rather than to stimulating the market in meat.

The livestock program in Tanzania started out on a similar footing to the Kenyan one, with investments in dairy processing in Mara region through a state loan (mostly in the early 1970s) and small dairy production support projects in Zanzibar and Coast region. For reasons to be discussed, this type of activity did not gain the same momentum in Tanzania as in Kenya, with the result that the program shifted direction toward its present major focus on education. The large education component is entirely in support of the veterinary faculty at the Sokoine Agricultural University in Morogoro. DANIDA, responsible for both the hardware and the establishment of a veterinary teaching staff, has been the sole donor to this faculty.

Kenya assessment. On the whole, DANIDA's Kenyan livestock experience appears both to have had a more successful record and to continue to be more promising than the Tanzanian one. Within the Kenyan program, the support to the dairy economy appears to have had significant positive effects; meat processing, in contrast, has had disappointing results. In Tanzania, DANIDA correctly recognized the limited scope for successes in the dairy sector comparable to those in Kenya. Yet it did not incorporate the implications of that finding (which relates to resource base differences in the two countries) into its subsequent strategy to assist in the development of a livestock health care program for Tanzania. The following discussion takes up each of these issues in turn.

The experiences related to the farmer-oriented part of the Kenyan dairy program have been extremely positive. Tick control measures in Uasin Gishu and Kericho, both districts with a high percentage of grade cattle, have taken almost instant effect. The majority of cattle diseases in these areas are tick-borne, and the benefits have been clearly observed by the local veterinarians. An important side of these projects has been the role of technical assistance personnel as catalysts in reestablishing well functioning dipping systems. The simultaneous support to the research system also has been very important. The research stations provide laboratory services for testing acaricide concentration, which is one of the crucial elements in monitoring the dip attendants' performance.

With regard to the future of Danish involvement in this area, the question of sustainability is critical. The permanent impact of the chosen strategy of tick control rests on the upkeep of universal dipping. This in turn is a function of collecting the dipping levy regularly and of securing a continuous high standard of dipping services. The dangers of the system breaking down, once established, are much greater for the mortality rates of cattle than no system at all, since cattle lose their congenital resistance to the tick-borne diseases within a generation.

Recent developments in East Coast Fever prevention at the Kenyan-based International Laboratory for Research on Animal Diseases (ILRAD) point to a potentially far less expensive and more effective means of treating cattle for this devastating disease, which has been the primary target of the tick control measures. The method, known as "infect and treat," is based on infecting the cattle with a live serum and treating them before the infection becomes debilitating. Treatment gives the cattle an acquired immunity and is therefore necessary only once. As a result it is not only less risky than dipping, it is far less costly (especially in foreign

exchange), since standard dipping prevention requires cattle to be treated twice a week. If the early enthusiasm with this new method is warranted, DANIDA will clearly want to shift its veterinary activities into it and only maintain some strategic dipping in order to control the secondary tick-borne diseases.

Leaving the possibilities of alternatives to dipping aside, the ultimate verdict on this project will depend on its ability to achieve self sustainability. This is currently the project's Achilles' heel. The collection of the dipping fees is done centrally by the Ministry of Agriculture and Livestock Development, which is gradually supposed to take over from DANIDA the responsibility and financing of the salaries of the locally employed project staff. As of 1987, the Ministry seemed unable to collect more than 50-60 percent of the fees, and was uninterested in taking on the new current-expenditure obligations. If this situation does not change before the withdrawal of Danish support, this systemic transplantation will in effect have been rejected, rendering the program's impact at best temporary and at worst negative.

On the dairy processing side, Danish support to KCC has helped to increase greatly this dairy organization's collecting and processing capability. Though KCC has a fair share of problems, some imposed and some self-made, its significance to the sector in securing predictable outlets and immediate payment has created a stable environment for dairy production that must be the envy of most African countries. From a production plateau of 800-900 million liters a year in the 1960s, the output of the Kenyan dairy industry rose steadily to around 1,300 million liters by the mid-1980s. Since DANIDA has been the industry's major supporter in this period (to the tune of over DKr. 180 million for the loan-financed equipment alone), it would be reasonable to credit it with a correspondingly major share in the success.

As for the future, it is unclear whether there is the basis for more of the same type of investment, in line with recent DANIDA offers of additional state loans to this end. The industry seems to be fast approaching market constraints to disposing of its output. This is due in part to stagnating domestic demand and in part to the closing off of two traditional export markets, Uganda (because of civil collapse) and the Gulf States (because of competition from the EEC).

The picture is less rosy for DANIDA's support to the meat economy. Halal Slaughterhouse was inaugurated in 1978 but only operated for a week or two before being closed down by administrative fiat. What apparently happened, insofar as the story can be pieced together, was that the plant had been appropriated for private purposes. Once this was discovered, the plant's operation was blocked by other interested parties. The facilities were left standing empty for six years. The drought of 1984 prompted the Kenyan government to request DANIDA to finance its reestablishment to cope with the extraordinary drought-related offtake of cattle; thus in August 1984 the plant started operating again—this time as a branch of the Kenya Meat Commission (KMC), a parastatal corporation. KMC's utilization of capacity at its other slaughtering facilities at Athi River and Mombasa does not allow for much optimism that the reestablishment will have turned this DANIDA investment from bad money into good. In 1976, the last year the KMC had the monopoly over beef sales to urban areas, its capacity utilization was 80 percent. Since 1977 utilization has plummeted and has hovered at 20-30 percent for every year except the extraordinary one of 1984. Low capacity utilization, a prime indicator of misinvestment, similarly mars the eight district slaughterhouses.

Danish support to the processing of two livestock products in the same country has resulted in very different achievement records, requiring some explanation. Essentially, the diverse outcomes appear to rest with the differences in the nature of dairy and meat products, which in turn determine their transportation and storage requirements. Simply put, four legs and a metabolic system make beef a self-propelling product, while the movement of milk in bulk from the major production areas to the urban consumers depends on the availability of rather technically sophisticated and capital-intensive transportation and storage systems. Leaving aside local delivery (which can absorb only a portion of the current levels of milk production), there is little choice in the current technology for milk processing, while slaughtering technology varies widely. As a result, milk processing and packaging has to surpass certain minimum daily volumes to be economically viable,[13] while meat processing is much more divisible and flexible. This in turn has organizational consequences. Technological conditions make a legal monopoly of the milk processing both more justifiable and sufficiently enforceable in practice.

The opposite holds true for meat processing. As publicly managed ventures (which must follow public policy on prices, health standards, and so on), the DANIDA-supported slaughterhouses do not have the flexibility to attract a good share of the market in competition with private butchers, who can pay more for quality animals than KMC and do not reject sick animals as both the KMC and the district slaughterhouses are supposed to do.

Low capacity utilization of the slaughterhouses implies that the investments have had little impact on the development of the meat market in Kenya. Furthermore, the analysis suggests that the public health objectives of the district slaughterhouses have failed to be realized. The experience of public slaughter authorities in establishing hygienic meat standards through rejection of animals "unfit for human consumption" is rather uniform. In such low income environments as those prevailing in most of Africa (including even Kenya's relatively well-off districts) meat quality control fails in one of two ways: by the compromising of meat inspectors or by the circumvention of the facilities themselves. Even attempts to destroy unhygenic meat by burying or coloring it repeatedly have been in vain.

It does seem possible to achieve the intended impact on environmental hygiene through the use of slaughterhouses, but only if the actual slaughtering is left to private butchers, without imposing any quality restrictions on the meat itself. Hygienic standards for the meat itself can only be successfully imposed when such standards correspond to consumer priorities. It seems there is no shortcut from public campaigns and education. A differentiated system with an option for certifying the quality of the meat might be an intermediate solution, but success can only be partial until the fundamental problem of absolute poverty has been alleviated. In that sense, the project may have been premature and the investment funds might have realized higher social returns elsewhere.

Tanzania assessment. Turning now to the program in the Tanzanian dairy economy, the authors note that DANIDA did not follow up either the early dairy production activities

or the investment in dairy processing. In neither case were the results particularly favorable. Indeed the Mara dairy came under some criticism from a distributional standpoint. Processing capacity was installed in an environment where farm households' milk production was low to begin with and did not have a firm technological basis for increasing—with the result that the dairy's existence encouraged a transfer of milk consumption from rural children to urban adults.

The fact that an approach which has yielded positive results in Kenya rammed into such constraints in Tanzania is a symptom of the differences in the cattle economies in the two countries. The DANIDA dairy activities in Kenya were focused on the highland cattle economy, a highly monetized, grade cattle-based farming system that has a number of parallels to European dairy farming. On the whole, the Tanzanian situation is closer to the other part of the Kenyan cattle economy, characterized as pastoralism or agropastoralism—where the links with the money economy are limited and the stock are indigenous, range fed, and primarily viewed as a risk-absorbing vehicle rather than as an investment object.

Although Tanzania does have small pockets of highland areas where the climate is attractive for keeping grade cattle (such as the area around the Mara dairy plant), both infrastructural and institutional obstacles put it at a disadvantage vis-a-vis Kenya. First, Kenya has large *contiguous* areas suitable for dairy farming, which means it can realize scale economies in the provision of extension, veterinary, and marketing services as well as in processing. Second, the Kenyan dairy economy has a long heritage from the days of European settler farming. By independence, KCC was already an extremely well-functioning institution. The transition to servicing an industry that has become increasingly smallholder-based has of course required skillful maintenance and adjustment of this institution, but managing a transition is easier than starting from scratch.

Given the character of the Tanzanian cattle sector, the physical and curricular plans for the Morogoro Veterinary Faculty are surprisingly reminiscent of European veterinary schools. The Morogoro program has been designed to include virtually the full range of veterinary activities, including facilities for and training in surgery and anaesthesia of small animals. If DANIDA's justification for funding the veterinary faculty was the perception of an enormous untapped potential for animal production in Tanzania, the diagnosis itself would be difficult to challenge. It is harder to justify DANIDA's choice of *means*. Project documentation leaves this question largely unanswered, and interviews yielded ambiguous results. The authors venture that the project has resulted from a decisionmaking process driven more by the resources Denmark could offer than by an analytical review of the demands of the sector in question. Since Denmark for good reasons is proud of its own level of veterinary services and education, DANIDA appears to have assumed (without much probing of the Tanzanian reality) that this system could provide an important remedy for the low productivity of the Tanzanian livestock sector.

It is clearly beyond the scope of this report to provide the kind of in-depth sectoral analysis that ought to have preceded the choice of a strategy for raising livestock productivity in Tanzania. This chapter confines the analysis to indicating a number of constraints that seem far more vital to the productivity of the sector than the one DANIDA has chosen to tackle through its support to the Veterinary Faculty.

The perception that the Tanzanian livestock sector has considerably underutilized its potential stems mainly from discrepancies between estimations of the potential livestock carrying capacity and estimations of current livestock populations. One such assessment[14] set the potential at 20 million livestock units, with an actual population equivalent to about 11 million units. Major sources of this discrepancy are: 1) poor distribution of water sources, 2) absence of coordinated land use, and, especially, 3) tsetse fly infestation. None of these factors can be adressed directly by the kinds of services veterinarians can provide.

There is no question that animal health, especially calf mortality, is a significant constraint on the productivity of the sector as well. But in light of the largely pastoral nature of the sector, intensive *curative* approaches to animal health will only cause a drain on the country's scarce resources. To be cost effective, the main thrust of an animal health program in Tanzania will have to focus on *preventive* health care. DANIDA has already reached this conclusion for the *human* health sector, so it may just be a question of time before the four-legged health strategy catches up with the two-legged.

A number of professionals concerned with livestock productivity issues in semiarid and arid, pastorally-based systems concur with this conclusion. For instance, the Veterinary Economics Research Unit at Reading University has for years been concerned with assessing the economics of veterinary investments and treatment strategies for different livestock systems. Their models show that preventive vaccines against pandemic diseases can pay, while just about every other kind of health care (including worm control) is at best marginal.

Research conducted at the International Livestock Centre for Africa (ILCA) based in Addis Ababa stresses the strategic importance of nutritional aspects of animal health as second only to the prevention of pandemics.[15] In the semiarid zones that host the bulk of Tanzania's cattle, perennials would seem to be the most promising. In view of such assessments, an animal health strategy based on curative treatment by veterinarians probably ranks considerably lower among strategic priorities for the livestock sector in Tanzania.

This is not to suggest that the country does not need well-trained veterinary manpower. A small cadre with high-level qualifications in basic veterinary sciences is a prerequisite for the articulation and enactment of a preventive strategy. In light of Tanzania's willingness to go along with the curative strategy implicit in the DANIDA project, it would appear that the cadre in question either does not exist or has not been in a position to articulate alternatives.[16] For the preventive strategy, it is quite unlikely that a full-scale veterinary faculty would have been the appropriate means to build up the necessary staff. Rather than an army of veterinarians, the manpower profile would include only a small elite corps of veterinarians, with an army of nonacademic trainees to trace and inoculate herds and work in a few serum-producing laboratories. One cannot help doubting the cost effectiveness of locally producing this elite, vis-a-vis sending them to an appropriate institution outside the country for advanced training.

If we assume that the Veterinary Faculty's existence is now a foregone conclusion,[17] DANIDA will need to address head-on the problem of how to secure a well-trained veterinary teaching faculty. Two alternatives seem possible. Either there will need to be a complete commitment to provide for full institutional support from the Danish base

of expertise (the Royal Veterinary and Agricultural University), or DANIDA will need to consider alternative sources of expertise from outside Denmark.

Both alternatives raise problems. In the first case, there would be a need to commit a core of Danish veterinary professionals to a medium-term (5 to 10 year) involvement in the build-up of a veterinary institution which will need to address significantly different health care problems than those in Denmark (or in the Kenyan highlands, for that matter). This would involve a basic professional reorientation toward African agropastoralism; it presupposes that DANIDA has such a commitment to the Tanzanian (and similar) livestock sector to entice personnel through the promise of career possibilities in the field. In the second case, one runs into the informal tying obligations of Danish aid. There would be strong objections to DANIDA using its bilateral budget to engage an appropriate counterpart veterinary institution from another industrialized country (assuming one exists). In this case DANIDA would probably need to reach agreement with another donor institution to assume financing. It would be politically easier for DANIDA to finance another developing country institution (assuming, again, that one exists) with the capabilities to interface with Morogoro.

Finally, now is the time to assess the utilization of the facilities at the Faculty on the basis of realistic, resource-conscious alternatives. in light of the type of manpower profile that a preventive strategy implies.[18] It is possible that some of the teaching facilities could be used for the training of lower-level manpower, which would be an integral part of the strategy.

The Cooperative Projects

Just as livestock provided the economic base for much of the development of Danish agriculture over the last century, cooperatives provided the institutional channel by which the farming population began to reap the economic, political, and social benefits of growth. Agricultural and consumer cooperatives have had a special place in the development history of the other Nordic countries as well. It is entirely fitting that the earliest Nordic agriculturally-oriented projects in both Tanzania and Kenya were aimed at cooperative development. Through a mutual show of interest between East African leaders and the Nordic donors, two Cooperative Projects got under way, in 1967 in Kenya and in 1968 in Tanzania. The projects have been the hallmarks of Nordic presence in the two countries ever since.

By the end of the 1960s, Denmark had assumed the administrative role for both of the projects. In practice, this has given DANIDA an edge in decisionmaking, though Nordic approval is required on important policy matters. The Nordic characteristic is perhaps most evident in the political importance of the projects' continuity, which seems to have taken on a symbolic significance. Indeed, the Tanzanian cooperative project has distinguished itself by such a strong staying power that it managed to persist throughout the six-year period when there were no cooperatives in the country. In both African countries, the only major category of support outside of technical assistance has been financing for the construction of Cooperative Colleges.

Projects with a history this long are difficult to assess in summary fashion. Not only have they gone through a series of permutations in successive phases; at various times they have consisted of multiple subcomponents that really have been projects in their own right. Their joint Nordic nature (with its attendant need to keep all the donors informed) has resulted in a vast quantity of evaluation materials. So as not to miss the forest for the trees, the discussion here attempts to focus on some of the broader themes and issues that emerge from the two decades of experience in the two countries. In the process, some of the issues that have had prominence in project evaluation materials are sidestepped, particularly when these relate more to specifics of project design than to broader strategic considerations.

Project overviews. It is helpful to begin with an overview of the conditions of cooperatives in the two countries when the projects began. By the mid-1960s, both the Tanzanian and Kenyan governments were in the process of coming to terms with cooperative sectors that had grown like weeds in the years following independence (1961 and 1963, respectively). The rapid proliferation had somewhat different origins in the two countries. In Tanzania, a powerful and successful grassroots cooperative movement had begun in coffee areas before the Second World War and spread throughout cotton areas and into some tobacco areas during the 1950s. The newly independent government latched on to the idea of cooperatives as an explicit policy instrument for removing the non-African (Asian and Arab) traders in the rest of the countryside, and it urged the establishment of cooperative societies across the board. Local elites quickly responded to the call.

In Kenya, the colonial government's discouragement of smallholder cash cropping up until the postwar period had prevented the development of an early grassroots movement as in Tanzania. Then, in the 1950s, when the government began an aggressive coffee campaign in the smallholder highland areas (especially Central province), it in effect imposed the formation of cooperative societies in those areas. The rationale was that cooperative pulperies were the only appropriate means for primary processing of the harvest. Following independence, the Kenyan government certainly seems to have looked favorably on the cooperative form (and unfavorably on the presence of non-African traders in the countryside), but it did not have an explicitly wholesale reaction like its southern neighbor. The only area where it directly imposed cooperatives was in the special case of group purchases of large farms. Elsewhere, aspiring local elites seem to have caught on to the attractiveness of cooperatives as a basis for visibility in the new era of African-dominated politics with the result that they sprung up everywhere.

The key substantive difference in the treatment of cooperatives in the two countries at this time seems to lie in the extent to which monopsony purchasing rights were granted to the societies. In Tanzania, once a cooperative society gained formal registration, it was vested with such rights over the surplus produce in the area.[19] In Kenya, coffee and dairy societies got monopsonies, but it appears that other societies had to demonstrate that they could attract over half of the market (60 percent) before gaining similar status.

The net results of the proliferation were, however, quite similar. Both countries had hundreds of societies and dozens of unions in financial shambles, with no reasonable system of accounts, and with staff and committees being blamed for (sometimes major) misappropriation of members' funds. Commissions were established to hear and

assess grievances and make recommendations to the governments. In both cases, the recommendations centered on the need for regulatory action.

Enter the Nordic Cooperative Projects. The projects started out with a two-pronged objective, which essentially has endured to the present: to help the government in its regulatory tasks and to encourage the cooperatives to shape themselves up. The strategy consisted of sending dozens of Nordic cooperative experts to the two countries to work both with the government departments responsible for oversight and with the cooperative management in advisory (and sometimes executive) roles, to develop various unified financial systems and training materials. In Tanzania, emphasis was from the outset on training members in the rudimentary skills they needed to keep the cooperative honest; this also got under way in Kenya, though at a slower pace. The magnitude of these early projects was quite striking. With about 50 advisors a year posted in Kenya and another 30 or so in Tanzania, by the early 1970s the Nordic advisors clearly overshadowed the assorted technical assistance made available by other donors in this area.

In retrospect, several key premises about intervention in the cooperative system have been fundamental to the successes and failures of the projects. First, the African and Nordic governments shared the view that cooperatives were an inherently appropriate institutional form for the development of smallholder agricultural areas. This view held irrespective of the economic base of the cooperative (or perhaps more accurately, there did not appear to be explicit consideration of the possibility that some agricultural areas did not have the level or type of surplus production that would be able to sustain a financially viable cooperative society or union.)

Second, there was a shared view that in the end it would pay to prop up weak cooperatives (where, again, the source of weakness might be teething pains of a society that did have a substantial economic base, or might be the lack of such a base to begin with). Third, there was a shared belief in the need for external regulation by government. Both countries adopted a set of quite extensive regulatory mechanisms to be applied across the board, including the need for government countersigning of cooperative checks in Kenya and for government approval of cooperative staff appointments in Tanzania. From the Nordic perspective, such regulation was considered necessary until the "movements" in the two countries were mature enough to police themselves. This attitude reflected the donors' underlying objective to promote the process of democratization through the rise of independent cooperatives. It is doubtful that either African government fully embraced this view, though over the years the Kenyan system has certainly given more scope for independence than the Tanzanian one.[20]

The projects were set to very similar tasks in the two countries. The combination of the national character of the projects and the belief that all cooperatives deserved support resulted in a dispersion of field advisors corresponding to the broad geographical coverage of the cooperatives themselves. In Tanzania, this meant posting an advisor at each of the nearly 20 regional cooperative unions rather than focusing on the traditional stronghold areas of the grassroots cooperative movement. In Kenya it meant postings to each of the provinces, where advisors then worked to erect the district unions that the government was keen on building. Advisors at headquarters worked on the development of uniform financial tools, starting with systems for basic accounting and for recording member transactions, and ultimately (in Kenya) a number of more sophisticated financial tools for banking, merchandising, financial planning, and so on.

By the early 1970s, economic and political developments in the two African countries coupled with more finely tuned political objectives for Nordic aid to create some considerable divergences in the two projects. The record of cooperative performance was clearly a factor for all the governments concerned. In Kenya, the first phase of the project had corresponded to a period of healthy expansion in coffee, dairy, and pyrethrum in Central and parts of Eastern and Nigeria provinces. Cooperatives had been heavily involved in the expansion, and it appeared clear that the management practices of these cooperatives had benefited substantially from the Nordic project's various inputs. By contrast, the cooperatives in most other parts of the country (which were based on different commodities) continued to perform very poorly.

Performance in the majority of nontraditional cooperative areas in Tanzania was also poor. But the Kenyan successes were not paralleled in Tanzania. By the late 1960s, agricultural performance in Tanzania's traditional cooperative areas was less spectacular than it had been in the 1950s and early 1960s. Moreover, one of the key targets of government regulatory action for financial abuses was the large, powerful, cotton cooperative network—the Victoria Federation of Cooperative Unions.

The Kenyan and Tanzanian governments' responses to the experience diverged over the issue of whether cooperatives were the appropriate tool for further development efforts. In Kenya, the choice was to promote cooperatives more vigorously than before, especially in areas where agricultural growth had been lagging. Tanzanian decision-makers latched onto the experiences of the weak societies and unions, and began dismantling the system. This culminated in an all-points bulletin announcing the abolition of agricultural cooperatives in 1976.

Though this divergence promised to result in a very different set of cooperative policies in the two countries, two points of similarity in approach may be noted. First, both governments maintained a "national" policy on the institutional form that did not recognize the quite different levels of capabilities of cooperatives in different geographical areas. Second, both governments took care to maintain a channel by which to gain access to the farming population. In Kenya, the point of access for a range of development initiatives being planned (in particular, credit schemes) would be the cooperative system. In Tanzania, the villagization program of the early 1970s had established village governments across the entire countryside by 1975, so that the abolition of cooperatives in the following years did not leave an institutional hiatus.

Developments in the Nordic position since the late 1960s had favored more attention to poorer target groups, and by the early 1970s these sentiments were quite articulate regarding aid to Kenya. Thus the Kenyan government's own intentions to focus increasingly on the less successful agricultural areas, and to use cooperatives as a development tool there, meshed well with the direction that the project probably would have had to take in any case. By contrast, the general wave of support for Tanzania meant that strong Nordic feelings on cooperative principles could

be overlooked (or overridden), so the project continued, despite the Tanzanian government's clear transgression of the by-laws of the International Cooperative Alliance in its 1976 action.

From this juncture, it is more appropriate to think of a shift in focus rather than a new project in the Kenyan case. System-building activities continued, and field advisors continued to promote better management. There were, however, two distinct thrusts in the field work. Though the general management support became focused on the weaker areas (and moved out of Central province), support for one particular activity, the "union banking sections," continued to be concentrated in the coffee and dairy areas—precisely because these were the only areas that had been financially sound enough to meet the fairly stringent qualifications for entering the program.

The Tanzanian project, on the other hand, had to start afresh. The first objective agreed on was to provide technical assistance to help the members of the new village structure take advantage of their organizational unit. By this plan, the Nordic project would work in unison with several other donors to train village-level, all-purpose technical advisors. But in 1978, before things got very far with this blueprint, the government assigned people from all walks of life (ranging from drivers to regional agricultural officers) to become "village managers." When this new program took effect at a moment's notice, it displaced the original concept of training the village advisors before assigning them. Under the circumstances, the Nordic project took a fairly pragmatic approach of concentrating on village bookkeeper training, much along the lines of the earlier lower-level training of cooperative staff and officials. The project developed teaching materials as well as a bookkeeping system for the villages, and it ran its own courses and those of other donors' regional integrated projects.

By 1980, widespread dissatisfaction with the services being provided by the crop authorities that had replaced the marketing cooperatives prompted the Tanzanian government to consider reestablishing the cooperative form. This idea received substantial support from the Nordic project, whose strategic position of being the only cooperative project at the time meant it could provide on-the-ground support to the effort. Once the institutional and legal framework was worked out, the project shifted back into gear, posting technical staff to the unions and to the government's regulatory arm at headquarters. A new element was a special foreign-exchange credit account with the Cooperative and Rural Development Bank, set up in recognition of the inadequacy of government mechanisms to allocate foreign exchange to agricultural institutions.

Assessment. In Kenya, the more stable institutional environment in which the Nordic project has operated over the years makes it easier to assess its strengths and weaknesses in a long-term perspective. Whether for this reason or because of the generally greater scrutiny associated with Nordic aid activities in Kenya, evaluation materials on the Kenyan project appear to apply a harsher than usual, and more thorough, set of performance criteria. The following remarks draw heavily on these reports, as well as on other recent work on Kenyan cooperatives.

There can be little doubt that the project can claim a major share of the glory for the progress registered in the management capabilities of the Kenyan coffee, dairy, and pyrethrum societies and unions. As noted, these cooperatives got off to a somewhat haphazard start, and in the late 1960s it was really an open question whether many of them would survive their infancy. Though not without problems, these cooperatives are on the whole an impressive and quite sophisticated set of institutions in which membership participation is strong and active.

These cooperatives are also the beneficiaries of another major contribution of the Nordic project: the cooperative banking system. An early initiative of the project in Kenya was the establishment of a system within cooperatives for issuing production credit and holding members savings through "union banking sections." The restrictions on credit were sufficiently stringent to ensure high repayment rates: The cooperative itself had to be on sound financial footing, and each borrower had to be guaranteed by two other cooperative members. Most of the finance was in turn provided by members' savings in the personal bank accounts, which caught on like wildfire as soon as they were introduced, in no small part because the accounts could be established with a minimum deposit one-tenth the size required by the ordinary commercial banks. This union-level system was in turn integrated with the services of the national Cooperative Bank, which provided overall financial guidance and some of its own capital for the credit program, known as Cooperative Production Credit Scheme (CPCS).

The Kenyan Nordic project has seen the cooperative banking system through a number of growing pains with sophisticated and forward-looking input. One of the more intractable issues has been ensuring a method to guarantee members' savings in the event of financial difficulties at the union level. The solution that has finally been reached, and to the implementation of which the Nordic project is providing substantial support, is to convert the union banking sections into societies in their own right. This solution has some attraction in addition to safeguarding the savings deposits. it makes possible a more general separation of the financial operations of cooperatives from their physical operations in crop and input handling. In light of the numerous difficulties that have endured in the financial management of many cooperatives (relating to timely crop payments, among other things), putting bankers in charge of the finances should provide the structural basis for tightening up the system considerably.

Foresight also allowed the project to mitigate the effects of an even greater cooperative financial problem that has occurred. In the mid-1970s, the Kenyan government and a number of donors were eager to expand the cooperative credit program to serve greater numbers of farmers. Since a large part of the justification centered on making credit available to cooperative members who previously had not had access to CPCS funds, the programs typically required less stringent scrutiny of the borrowers and offered softer terms. It is difficult to know what the Nordic donors thought of the new "special credit schemes" as a vehicle for reaching the poor. Bilateral support to one such scheme by DANIDA (to be discussed below) suggests that the precise mechanisms, rather than the principle itself, came under Nordic scrutiny. In any case, the project was quick to point out that the existing cooperative banking system had to be shielded from the risks of the new schemes, in light of the different set of criteria that were to be applied. In practice, this was achieved by establishing separate accounts for the special schemes within the Cooperative Bank. By this system, the Cooperative Bank did not assume risk on credit issued by other criteria.

As a result, the existing cooperative banking system was sheltered; the cooperatives that received credit from various of these schemes have been less fortunate. Credit was in many cases issued on a free-for-all basis, often without much consideration for the productive uses to which it might be put. Repayment rates under many of the special schemes have been considerably below those of the CPCS, and in some cases so poor that there is little chance of recovering the bad debts. This has left the finances of the responsible cooperative societies and unions in a terrible state. Rather than provide a boost to the weaker agricultural areas, the credit program has been responsible for further weakening their cooperative institutions.

There is no apparent way of separating out the effects of the management advice and of the training provided to these cooperatives by the Nordic project, which may have had some marginally positive effects in this interim. But the conclusion must still be drawn that, after twenty years of working with cooperatives outside of the coffee/dairy belt, there is little to show for the effort.

Though much of the foregoing analysis is consistent with that found in recent evaluation materials on the Nordic project, this last conclusion differs in one important way. These reports have recognized the tremendous progress made in the coffee and dairy cooperatives in contrast with the rest of the system. But they have also assumed that the project's efforts have been concentrated on those success areas. Going back over the entire history of the project, one can identify only two respects in which the project can be seen to have favored the successful areas. First, following the development of a simple overall bookkeeping system, the so-called member transactions systems for coffee and dairy products were the earliest systems to be developed. In light of the substantially higher level of transactions already occurring in these commodities, this was clearly the approach that could have the quickest payoff as well—but those who seek a bias may find one here. Second, as mentioned, the activities of the project's banking component tended to concentrate on these areas precisely because their banking systems were in the process of developing. In other respects, including the general support to management, already by the early 1970s the project clearly was concerned with shifting its focus toward the weaker areas and away from the broader coverage with which it began.

This distinction is important because it raises more fundamental issues than those raised so far by the Nordic donors about the viability of cooperatives *as an institutional form* in areas with weak agricultural bases. Nordic analysis of this issue has shifted very little since the first project evaluation in 1969. It has consistently concluded that cooperatives *are* an appropriate development channel for areas with low agricultural surplus. The only variation on this basic belief has been the suggestion that in the truly marginal areas, it might be appropriate to establish multipurpose "precooperatives" rather than more traditional marketing cooperatives. None of the many evaluations consider the issues that arise for cooperative management when commodities have high bulk and low value (like maize and other food crops); when they are grown over a more dispersed area (under the more extensive farming practiced outside of the highlands generally); or when they have complicated and expensive processing requirements (like cotton and sugar). Nor do any of the evaluations draw upon the experiences of cooperatives dealing in such commodities elsewhere in the developing world.

This is not to suggest that there is no scope for successful cooperative development outside the few highland commodities where it has already secured its position. The relatively successful experiences with cotton cooperatives in the 1950s and 1960s in Tanzania, as well as the success in Kenya within the dairy industry, which has more complicated processing requirements, suggest that there is much room for improvement in the Kenyan cotton industry, for instance, with the cooperative form. This is indeed the commodity on which the new phase of the Nordic project will concentrate. This is a landmark, representing the project's first involvement in sectoral policy issues of pricing and marketing, which will be crucial to the cotton cooperatives' success.

But unless the Nordic donors openly begin to reassess the blanket assumption that cooperatives are a good thing everywhere, there are dangers that future promotion will again turn to areas where cooperatives do not stand a chance of doing well until there are major breakthroughs on the technological front, or considerable advances in the sophistication of the local population's business acumen. The assumption that propping up a weak cooperative will end well needs to be challenged in light of two decades of experience. What benefits accrue to members in poor areas when cooperatives run higher overheads than those with which private traders can operate? Can staff and members learn how to run sound cooperatives by working in financially unviable cooperatives being propped up by external means year after year? Is it any wonder that field survey after field survey reports that members are not inspired to use their cooperatives as a participatory development channel (which, after all, has been a primary goal of the Nordic project)?

Inasmuch as many of the geographic areas that received support under the Nordic project in *Tanzania* share the characteristics of the weaker agricultural areas of Kenya, these same issues apply there as well. The project's overall experiences in Tanzania are more difficult to assess, however, because of the tumultuous institutional environment in which it operated. Agricultural performance was waning, and the various reports from the time suggest that cooperative performance was declining even in some of the better-off areas, as in cotton. There were clearly a range of policy factors, including price policy, that may have adversely affected cooperative accounts and efficiency. In light of the generally pro-regulatory approach of the Nordic project, it is interesting to note one common criticism centering on the process of regulation itself. In this view, the introduction of the Unified Cooperative Service (under which cooperative staff could no longer be hired or fired without government approval) took away membership control, thereby narrowing the scope for the cooperative management's accountability to the members. At the least, it is clear that the project was ineffective in its support to the dozen or so regional unions that had been government constructs—unions that not only lacked administrative capabilities but the very economic basis to sustain successful cooperative activities.

Perhaps surprisingly, the interim period when the project operated in the absence of a cooperative system appears to have been a relatively positive experience. Two factors relating to the project's focus on village bookkeeper training help explain this. First, there was (and remains) a dire lack of basic accounting skills in rural Tanzania. Second, villages, once established, were a *fait accompli*. From their inception,

they were charged with a number of tasks requiring the use of such skills. This was particularly true once the cooperatives were abolished. The parastatal structure that replaced the regional unions and primary societies relied on the villages' ability to serve as self-managing buying points. As a result, the project probably helped prevent an even worse decline in peasants' exchange relations under the parastatal marketing system than would have taken place in its absence. In addition, of course, people acquiring the training were in the position to provide other useful functions in their villages, and in the wider economy.[21] In all likelihood, there would be substantial benefits from continuing this type of training, since the demand for these highly fungible skills in the rural economy certainly was not exhausted in the short time the project was engaged in it. From the perspective of the broader socioeconomic goals of the Nordic donors, such activities may provide one of the most direct channels for empowering the rural population in a country where the institutional policies and structures have tended to constrict rather than widen their opportunities.

The project that has emerged to serve the new cooperatives is too young to assess by any other criteria than its objectives. From the beginning, the Nordic project has been supportive of the reintroduction of independent, voluntary cooperatives. It is likely that it had some influence on the fact that the final wording of the new cooperative legislation conforms to international principles on voluntary membership. In today's Tanzania, the substantive significance of this particular point is doubtful, since cooperatives have been granted monopsony purchasing rights for members' and nonmembers' produce alike. There are, however, very real battles being waged between the reemergent movement (which until now has mainly consisted of unions and societies in former cooperative stronghold areas) and the Party structure over the question of the movement's independence of the Party's political monopoly at the village as well as national level.

Though this struggle will need to be waged among its domestic participants, it is significant that the tenor of the new Nordic project reflects a greater independence from the will of the central Tanzanian authorities than did its predecessor. The distinct break with the earlier pattern of blindly following Tanzanian government priorities is seen in the regional selectivity of the project. On the grounds that one should first see whether the cooperative structure can work in the regions where cooperatives have traditionally performed better, it has confined support to the seven regions where the old movement is trying to regain a footing. These are also the areas where it is hoped that there will be a quicker production response to the new institutional forms for marketing and input distribution.

In view of the chronic problems the Nordic projects have experienced in both Kenya and Tanzania in supporting weaker agricultural areas, this type of selectivity provides an interesting contrast to the typical project pattern of pressing on in the face of adversity. In light of the comments above on this issue in the Kenyan case, the change was a positive one. The issues raised above are still very relevant in the Tanzanian case, however. The choice to focus this project initially on the relatively stronger agricultural areas was the result of a great deal of footwork by a few individuals who had substantial background in Tanzanian agriculture. It was not the result of an institutional learning process on the part of DANIDA or the Nordic group based on past experience. Indeed, stronger winds could easily have blown in the direction of providing support to the entire national system, as Tanzania officially requested. Unless more in-depth analysis of the likely conditions for successful development of agricultural marketing cooperatives is conducted by DANIDA and its Nordic partners, it is altogether possible that the next round of Tanzanian requests to extend the project will get a positive response. Indications of the "blanket" approach that cooperatives are inherently suitable institutions have surfaced, for instance, in DANIDA's discussions with the Tanzanians concerning another project recently approved to provide inputs to the four Southern Highland regions. Several of these regions did not begin to register any considerable grain surpluses until their (government-imposed) cooperatives were abolished and replaced by the National Milling Corporation in the mid-1970s. This suggests that they will not be in any position to successfully manage the movements of these grains and the input trade at the low marketing margins which are absolutely essential when one is dealing with such low-value crops.

As for prospects for the project as currently constituted, much will depend on the institutional outcomes concerning the movement's independence. In the best of cases, the project may have the scope to carry out the democratization objective, as well as an economic objective of helping to revive crop marketing structures. It would be natural, perhaps, for the project to move into revival of membership training (which had been a casualty of the 1976 abolition), and to support the interests of the Cooperative College to have an independent research budget with which to do empirical studies on cooperative-related issues. What seems obvious at this juncture is that if the Party wins the current battle, the socioeconomic objectives and main legitimization of the project will have gone down the drain.

One final note relates to some potential problems of the interaction of cooperative leadership and the donor community. Cooperative management shows signs of wanting to get into a range of production activities that are uncertain from the economic standpoint—such as the takeover of large farms. In this respect, the fact that the Nordic project does not have a monopoly in supporting the cooperatives is significant. Given the likelihood that other donors will want to put money into relatively better cooperatives (with the risk of overcommitting them, as was part of the problem in the last round) this is a juncture at which donor coordination on support to the movement is extremely important.

Production

DANIDA has had two modalities for directly production-oriented assistance: smallholder-oriented projects, mainly in Kenya, and bulk deliveries of chemical inputs, mainly in Tanzania (and far larger in financial terms). Quite different issues are raised by the two types of aid.

Projects in marginal areas. In keeping with DANIDA's focus on poorer target groups in Kenya, the production-oriented projects have been directed toward the less developed agricultural areas. Mainly these areas are formally defined as "marginal" by rainfall classifications, but they also encompass some geographically remote areas with medium potential, as in western Kenya. Little agricultural progress has been achieved here, despite numerous donor-assisted projects since the mid-1970s.

DANIDA has pursued two very different approaches to raise productivity: by encouraging the adoption of existing technological packages (especially chemical inputs) and,

more recently, by focusing on the management of soil and water resources to improve the natural resource base. Following the first of these approaches is the Farm Inputs Supply Scheme (FISS), in operation in Kenya since the mid-1970s. FISS is one of the special credit schemes (mentioned above in the discussion of cooperatives) that have aimed to raise output by subsidizing the establishment of cooperative distribution mechanisms for various farm inputs and other rural amenities. The project has been heavily staffed with technical assistance, generally well managed, with a high (but falling) level of recovery compared to most of the special credit schemes.

Thanks to the emphasis on management, FISS will not have the negative effects on the financial positions of weak cooperatives that credit schemes like the World Bank's IADP have had throughout the Western cotton-growing areas. But the project's conceptual framework raises doubt about whether FISS will have had much of a positive impact beyond the project period itself. Underlying the project design is the basic supply-side philosophy, not uncommon in development circles, that if farmers have access to inputs, they will develop a taste for using them. Unlike the more typical case where subsidies promoted new technology, FISS hinges on an assumption of failures in the retail markets for a technology of which Kenyan farmers have been aware since the 1960s; the inputs have not been stocked in local stores because demand has been too low to achieve scale economies in marketing.

DANIDA's evaluations on FISS do not look explicitly at the validity of these assumptions, but available indicators raise doubts. In the dryer areas, the project appears to have been far more popular for the provision of building materials than for inputs, suggesting that farmers have declined to use high-risk chemical inputs where rainfall is highly unreliable. At the other extreme, in the areas with relatively high agricultural potential, the project proved to be largely redundant, inasmuch as shops already existed to meet input demands. For the areas in between, the program may have added to input usage in the short term. But while the stores established by FISS were running with a small surplus on their operating costs, the inputs continued to need heavy subsidization by the project, *despite the higher turnover.*

DANIDA's area-based irrigation, water, and soil management projects in several of Kenya's marginal districts follow an alternative approach to the traditional input/credit project. The oldest of these, in Garissa, is based on more standard pumping from river technology. A project in Mutumo introduces a prototype design that has been followed in the more recent Taita/Taveta project.[22] The project technology is based on entrapment of precipitation before it runs off the soil, so it can be stored in subsurface or other natural reservoirs. Its "learning process" approach to expansion represents an important departure from the more common "blueprint" approach to area-based development. Organizationally, it is based on the identification of catchment areas and the establishment of self-help groups.

So far the water management aspect of the activities has been more popular among the participants than the afforestation activities. It is too early to assess the productive impact, and especially the cost effectiveness, of this project, but in principle the approach is exciting because it has the potential of effectively reaching poorer smallholders in marginal areas. By augmenting the local resource base directly under the producers' control in a risk-reducing direction, it has advantages over the input/credit schemes, which augment the uncontrollable risk factors such as weather and pests, with the risk of unpredictable timing of input supply and of severe crop failures in the event of inadequate rainfall.

Bulk input supply. Tied import support for chemical inputs has been a major portion of the annual disbursements to Tanzania since 1979. DANIDA has been one of many donors shipping fertilizers, and the sole provider of coffee pesticides. Several issues are raised by this practice: the fungibility of government funds, the role of sectoral policy constraints, and the constraints imposed by tying by source.

On the first point, it seems clear that the Danish grants have added to the total amount of inputs available in Tanzania, given the extreme scarcity of foreign exchange. Yet the inputs may not be fully additional to those which would have been purchased in the absence of aid. For instance, the Tanzanian treasury has used the alibi of donor support to withhold from coffee growers the access to foreign exchange that rightfully was theirs under the "export retention scheme" guaranteeing exporters a share of their earnings in hard currency to meet import needs. The result is an almost complete dependence of the coffee industry on donor funds. This renews questions about the Tanzanian government's willingness to prioritize agriculture.

Second, the sectoral policy framework for import distribution has been severely marred by a restrictive publicly run retail system (with under 20 outlets on the entire mainland), and a distorted pricing system arising from a very high-cost domestic fertilizer industry.[23] Though DANIDA, like most other input donors, has expressed concern with these problems, it has not made its deliveries contingent upon policy changes. While it would be unreasonable to expect a small donor singlehandedly to spearhead policy dialogue, the donors' own overall significance puts them *collectively* in a position to discuss more seriously with the Tanzanian government the measures to free up distribution and spare farmers from having to pay the costs of inefficient domestic production. At the least, there are compelling reasons for coordinating the donors' own supply programs on timing, types of fertilizer, and destination. DANIDA and other input donors will need to develop greater conviction that these issues are worth addressing.

On the third point, the consideration being given to shifting to denser (and more cheaply transported) types of fertilizer raises questions for longer-term Danish support, since these varieties are not produced in Denmark.

Financial Transfers to Development Banks

Both Tanzania and Kenya have development banks with a primary focus on the rural economy. In Tanzania, this bank went for many years by the name Tanzania Rural Development Bank, but was recently renamed Cooperative and Rural Development Bank (hereafter referred to as CRDB). The Kenyan counterpart is the Cooperative Bank of Kenya (CBK). These development banks have had similar objectives of providing financial services to the part of the rural economy that would not be particularly attractive to the regular commercial banking system. In practice, Tanzania's CRDB has had a wider scope of activities than Kenya's CBK because the Kenyan cooperatives have had much responsibility for credit in the field, whereas CRDB has had full responsibility down to the village level.

Both banks have enjoyed a reputation for professionalism, which accounts for their being saddled with substantial administrative burdens as the implementing agencies for a

myriad of donor-financed credit projects. Of the two, the Tanzanian bank appears to have been somewhat less sheltered from the deleterious effects of the many unsuccessful credit programs, in that political directives have frequently overridden its collection attempts.[24]

Denmark has funded both banks. CRDB has been one of DANIDA's largest single recipient institutions, receiving large capital grants annually since the early 1970s. Support to the capital budget of the CBK began in 1976, on a far smaller scale. Beyond this, the two institutions reflect the distinction between the bulk character of the Tanzanian portfolio and the more administratively intensive Kenyan one.

The origins of the support to CRDB appear to stem from a stamp of good health by the World Bank (which subsequently used it as agent for a number of its input credit activities), and a joint Nordic review early in the 1970s. For close to a decade, DANIDA stayed virtually out of CRDB's sphere of influence, providing no technical assistance and being content to receive quarterly reports on the bank's activities. Over the 1970s, CRDB provided an administratively efficient channel for undisbursed funds from the entire DANIDA project budget at the end of each fiscal year. DANIDA's remoteness from the on-the-ground problems of the CRDB is reflected in the fact that it did not even safeguard the bank's access to the foreign currency that was being transferred to Tanzania on its behalf. This practice was modified somewhat in 1980, whereafter about one-third of the total allocation has been reserved for CRDB in informally tied foreign currency.

Support to the Cooperative Bank of Kenya followed other DANIDA involvement in the cooperative sector, which gave DANIDA a clearer sense both of the CBK's needs and of its own abilities to meet these. Some capital support has been earmarked to specific activities in coffee and dairy, with the remainder entering the bank's own capital budget. These funds have been accompanied by a handful of Danish financial advisors throughout the project period. Though the capital support appears to have been useful, the project's real strong point is its technical assistance. As the Kenyan cooperative banking system gains in sophistication (with, among other things, the development of the union banking system discussed above), the tools of the financial officers need to grow correspondingly. Over the years the Danish advisors have filled a felt need on the part of the Kenyan staff for on-the-job training in the use of more refined investment analysis as well as general banking practices. More recently, the advisory staff has been in a pivotal position in CBK's rationalization exercise to create a unified credit scheme out of the chaotic institutional apparatus left behind by the special credit schemes of the 1970s.

In the Tanzanian case, DANIDA's support has not been distinct from the general activities of CRDB, so it is appropriate to assess aid effectiveness within this overall context. Though CRDB has been a relatively sound institution, it is appropriate to question the basic orientation of this financial transfer. Credit does not stand out as a principal constraint to agricultural potential vis-a-vis the range of incentive problems that have been facing Tanzanian producers since the 1970s. This holds for seasonal inputs (for which, as noted, there have been under 20 retail institutions on the entire mainland), and it holds for a range of investment items like oxplows, mills, bicycles, and corrugated iron sheeting. Here one can draw a distinction from the Kenyan situation, where the basic institutions in the agricultural sector appear to be more or less in working order, and where the retail markets can meet the demands of those with cash. Under such conditions, it makes sense to refine at the margin the capacity to assess creditworthiness of potential investments, so that loan officers can serve more fully as economic advisors to agricultural producers.

Crop Processing: Support to the Sugar Industry

Both Kenya and Tanzania have had substantial portions of their crop-related activities in processing, mainly through state loans for sugar extraction and grain storage equipment. The experiences in the two countries raise similar questions concerning the appropriate uses of state loan-supplied technology; here the Tanzanian sugar investment is discussed, referring the reader interested in the grain storage to the main report.

Overview. DANIDA, along with the World Bank and the Netherlands, has been one of the three leading donors to the Tanzanian sugar industry. This is one of the rare occasions where Danish commercial investments preceded the aid program (in contrast to former colonial powers, for whom the practice was quite common). The Tanganyika Planting Company (TPC) was established in the interwar period by one of Denmark's leading shipping magnates, and soon assumed a prominence in the country's sugar sector that has endured to the present.

TPC was initially supplied with non-Danish milling equipment, but in the early 1960s it began to employ a prototype of a new technology for cane processing developed by the leading Danish beet sugar processor, De Danske Sukkerfabrikker (DDS). The technology was evolved from the method normally used for processing beet sugar, known as diffusion. This collaboration was the key link in subsequent DANIDA involvement. In the late 1960s, DDS supplied a cane diffuser to the Ramisi estate in Kenya's Coast province, and in the mid-1970s to the publicly-owned Kilombero estates in Tanzania, in collaboration with the World Bank, which financed the production end. These investments were all made as state loans. With the ongoing investments in the TPC, Denmark was a major participant in the general expansion taking place in the Tanzanian sugar industry in the 1970s.

By the late 1970s, TPC's parent firm in Denmark wanted to divest from the sugar estate, following a protracted period in which it was being starved of the foreign exchange allocations needed to maintain its capital stock. DANIDA smoothed the transition by financing a management contract for the initial period of public control and providing some new equipment (mainly spares).

Though this sequence of events may give the impression of a logical progression in DANIDA's sugar policy, in fact DANIDA had no *ex ante* sense of sectoral involvement. Rather, DANIDA first became sectorally concerned with its role in sugar *after* making these investments. In 1981, Denmark joined the Netherlands in the World Bank initiative to take a unified stance on the rehabilitation of the sugar industry. By this time the industry had fallen into a general decline because of factors including the lack of foreign exchange for maintenance activities and poor management of production and processing. The donors jointly requested changes in government's sugar policies, including a block on further expansion until performance on the existing estates improved. On the implicit (if not explicit) understanding that the donors would support rehabilitation of the estates in which they had already

invested, DANIDA fully expected to come up with substantial additional financing. But over the next two years the World Bank changed its position because further analysis on the agricultural sector concluded that sugar was not a priority area for scarce rehabilitation funds—in light of other, more structural problems in agriculture (such as the entire management system under agricultural parastatals) and estimates that other crop enterprises had a higher net foreign exchange earnings/savings content than sugar. The Danes followed the Bank's lead and closed the books on sugar in Tanzania.

Assessment. In assessing DANIDA's involvement in sugar, one would wish to go beyond the general information on the decline of the Tanzanian sugar sector since the mid-1970s to look specifically at the Danish investments. Very little information exists in DANIDA on these investments, as they came at a time when state loans were subject to little or no monitoring. The information gap did not improve with the joint donor initiative, since DANIDA left the analytical work to the World Bank, which in turn focused on overall performance issues rather than those specifically related to individual donor investments. Information from a number of interviews with experts in the sugar sector suggests there are grounds for concern about the specific nature of DANIDA involvement. At issue is the choice of technology for sugar processing.

On today's technological shelf there are basically three different viable options for the processing of cane sugar: 1) open-pan sulphitation (OPS), 2) the vacuum pan (VP), and 3) diffusion. The OPS and the VP technologies differ in the way the boil extracts cane juice to induce crystallization (a difference reflected in their name) and in scale—the VP requiring a large-scale cane throughput to be efficient (minimum 3,500 tons/day) and the OPS able to run on a much smaller throughput (60-150 tons/day).[25] The diffusion technique differs from the others by the way it extracts the sucrose from the cane. While they rely on mechanically crushing the cane (with mills), diffusion extracts it through a leaching process. This principle was developed for sugar beet, where it is the dominant processing mode. The Danish Company DDS introduced the prototype cane diffuser at the TPC estate. Though some small-scale versions are available (and as yet untried in Africa), the scale of the standard diffusion technology corresponds to the VP.

The three technologies represent very different options for potential output levels and required factor proportions. From a given quantity of cane, the diffusion technique can in principle extract 5-6 percent more sugar than VP, which in turn leads OPS by at least 10 percent. But for a given output of sugar, the small-scale OPS may require less than one-quarter the investment of the large-scale VP, and provide over six times the employment. By contrast, what distinguishes diffusion from VP is not so much capital as management intensity. Although diffusion is mechanically simpler, its tolerance margin for unsteady production is much lower and the consequences of a production stop much costlier (because of restart time and losses due to fermentation).

Matching the technological options with the conditions of potential recipient countries cannot, in all fairness, be done abstractly in a few lines. Yet the unpredictable production environment prevailing in most of Africa raises doubts that the diffusion technique could succeed there. A choice between OPS and VP technologies would be somewhat less transparent, depending on many variables, including scale of production, national price policies, and given infrastructure. Geographically concentrated, high-volume production of sugar definitely favors VP technology. Yet other conditions, such as the abundance of labor vis-a-vis capital, the feasibility of extensive versus intensive cane cultivation and the scarcity of foreign exchange, point in the opposite direction. Consideration of the various options in sugar processing technology is thus clearly an important step in making investment decisions, in some contrast to the case of dairy, where there is basically only one technology available for industrial processing. For the provision of Danish tied aid, however, the choice of technology in sugar is a nonissue, since Denmark can only deliver the diffusion technique.

Not surprisingly, the performance of the technology has been dismal. Management could not concern itself with maximizing extraction rates; its full attention and ability was required to ensure that any extraction took place at all. As a result, diffusion technology has been put out of commission. According to DDS, the technology was never employed in the one Kenyan estate receiving a Danish diffuser—at least initially because the cane production was too low to keep the equipment in operation. At TPC in Tanzania (which had a large expatriate professional staff during the relevant period), the diffuser was found to be too sophisticated and was eventually abandoned. The Kilombero estates, which have had far worse management problems, have not been able to cope with diffusion either.

It is significant that not a trace of this lesson seems to have been imprinted in DANIDA's institutional memory. DANIDA closed the book on sugar in Tanzania for macroeconomic reasons. But because it never conducted a technological evaluation of the sugar investments, there are no grounds for qualms against providing the same technology in the future should Tanzania or another country request it at a more propitious time. Though this lesson has been registered by the company that had developed and provided the technology, it would be too much to expect a commercial firm to decline a contract of similar magnitude were it offered in the future.

Other Activities Supporting Agriculture

DANIDA has financed numerous activities intended to promote agriculture indirectly, including transportation infrastructure and industrial import support.

Support to transportation infrastructure. DANIDA has been among the donors to explicitly recognize the linkages between transportation investments and agricultural production in its portfolio and future plans. For the future, it has commissioned a comprehensive study to identify bottlenecks in Tanzania's transportation infrastructure that should be of use to donors generally. So far, the main thrust of support to transportation in both countries has been through labor-intensive, rural, road-building projects. In Kenya, DANIDA has been an important donor in the ILO-inspired Rural Access Roads Program (RARP) since 1977. The experience has been extremely successful in establishing an organizational form for constructing dirt/gravel roads with labor-intensive methods. In addition to facilitating rural trade, the 7,500 kilometers of all-weather roads established under the program (through some 60,000 man-years in total) have boosted purchasing power in the 26 districts where they have been constructed by virtue of the employment generated.

The long-term significance for agriculture will, however, depend on how and to what extent the financial and

organizational problems of access road maintenance are solved. For a transitional period of three years from 1985, DANIDA is among the donors continuing to support what is henceforth a maintenance program. The fact that the roads are situated in relatively more productive districts increases the probability that political pressure will resolve the problems.

In Tanzania, the labor-intensive feeder roads program is in Ruvuma region in the Southern Highlands. Unlike the RARP, which is administered by the Kenyan Ministry of Works, this project is administered directly by ILO, which was again the source of inspiration for the similar project idea of providing temporary wage employment in rural areas. Yet while the RARP is posed to make a real contribution to agriculture, the Ruvuma project appears to have (at best) negligible chances for a positive impact. The difference lies in the quite different resource endowments of the project areas.

Ruvuma is an area with abundant agricultural land, where labor in peak farming seasons is most probably the constraint to expansion. In this context, a labor-intensive feeder roads program risks having a negative impact on agricultural output unless it is very cautious both in identifying the labor peaks of the farming systems and in designing the project to require unskilled labor only in the slack periods. The project did not even begin to examine these questions until several years after inception, and results of surveys conducted then downplayed the finding of some adverse effects on agriculture.

Moreover, project documents provide no substantive evidence that the roads themselves would have a net positive impact on agriculture, a result put in some doubt by the low traffic flow. An analysis of whether other constraints—such as the lack of fuel, trucks, spare parts, or storage—have not been more binding than the roads themselves, or whether alternative logistical systems (like bicycles/local storage/all-weather trunk roads) might not have been more appropriate, does not appear to have been done. Rather, the approach chosen seems to reflect ILO's preoccupation with logging the wage hours it has created, irrespective of the local conditions. By contrast, population density or land shortage (typically an inverse indicator of year-round surplus labor) was an explicit criterion for the allocation of RARP activities in Kenya.

Industrial import support. In addition to chemical inputs, DANIDA has provided Tanzania with increasing industrially important support—to the soap industry since 1979 (technical fat) and to the local engineering/smithing industry since 1985 (steel plates and rods). The aim has been to support production of end products in demand by rural producers.

Aid to the soap industry was considered support to "incentive goods." DANIDA took care to provide the quality of fat that could only be used to make the low-grade washing soap not in demand by higher-income urban dwellers. Monitoring as of early 1985 found the soap (albeit at high prices) in shops in distant villages, many of which had not seen this basic commodity for years.

The steel imports were intended to alleviate bottlenecks in production and repair of infrastructural items (like vehicles) and production inputs (like hoes and plows). Informal reports from late 1986 suggested that this objective was at least partially thwarted by the type of steel sent. The steel rods were absorbed by the local construction business, a booming inflation hedge activity for urban dwellers. The experience suggests that more care will need to be put into the selection of types of commodities provided (as was done in the case of soap).

On the whole, import support is a creative and potentially positive response to a range of constraints regarding aid to Tanzania: rampant shortages of most items because of the scarcity of foreign exchange; the near impossibility of running successful agricultural projects in the context of both the economic crisis itself and the policy environment in which projects must operate; the formal and informal restrictions on Danish aid that make pure financial transfers more difficult to provide than Danish-based commodities; and the Tanzanians' longstanding inability to prioritize agriculture's import needs (vis-a-vis completing various industrial investments, the new capital in Dodoma, and so on).

Yet commodity aid to Tanzanian industries sidesteps some fundamental questions on the overall soundness of the government's trade and industrial policies. A recent World Bank study[26] that surveyed over 100 Tanzanian industrial enterprises found the sector marred by numerous firms producing a negative value added, in many cases irrespective of the level of capacity utilization. The situation has arisen from the protracted period of overvalued currency, which has underpriced industrial imports. The distortions have been compounded by the administrative allocation procedure for foreign exchange, that has been unable to take into account the relative efficiency of the various firms' resource use. Poor performers were found in private and public sector alike, with considerable variation among firms in the same industry.

The only way to sort out fully which firms are financially viable and which are not would be to get the exchange rate to its market value. Without this, donors providing industrial import support need to conduct detailed economic and financial analysis to ensure that they are not bolstering up firms that have no prospects for viability in the economy once macroeconomic health is restored. If the donor's ultimate objective is to reach the rural areas, it may at times be more appropriate to sidestep the Tanzanian industrial capacity altogether and to provide the end products directly.

Policy Conclusions

This final section draws conclusions from the assessment of past experiences that may be relevant to DANIDA's future activities in support of East African agriculture. In particular, it suggests policy changes that could facilitate a better linkage between the needs of the recipient countries' agricultural sectors and the resource endowments from which the donor can provide assistance.

Assessing the East African Portfolios

DANIDA has engaged in four distinct categories of resource transfers, each with somewhat different implications for aid effectiveness: (1) transfer of Danish capital goods (hardware) through state-loan-funded projects; (2) transfer of Danish commodities as balance-of-payments support; (3) transfer of Danish know-how (software); and (4) transfer of international know-how through Danish financing. The first category broadly encompasses the tied state-loan program (and some project aid), the second the more recent shift to import support (whether formally tied or untied), the third the majority of project aid, and the fourth the contracting out to UN agencies through multi-bi projects. The following discussion concentrates on the first of these three types.[27]

Reducing the level of specificity to so few categories

raises the level of abstraction correspondingly. While the discussion continues to focus on activities related to agriculture, the validity of the generalizations made will at times transcend sectoral bounds to include the wider aid portfolio.

Transfer of Danish capital goods. The opportunities for Danish investments in Tanzania and Kenya using tied state loans have been rather unsatisfactory. The main problems are of two types: limited capacity of the recipient country to determine which investments in industry and agro-industry are needed; and erratic production environments, which make running and maintaining sophisticated Danish equipment difficult.[28]

It is widely recognized in DANIDA that the first type of problem led to misplaced investments in the expansion of the Tanzanian cement industry. Tanzanian officials were either unable or unwilling to base their financing requests on realistic projections of demand and cost, with the result that many millions of Danish kroner have gone into cement factories that can keep running only with large subsidies from foreign donors. Slaughterhouse investments in Kenya appear to fall into the same category, since the economy cannot readily absorb them.

The second type of problem has surfaced in Tanzania in the case of sugar equipment, which requires much more stable conditions than Tanzania can provide. Only in the case of investments in dairy processing in Kenya does there appear to have been a clearly positive role for Danish state-of-the-art capital goods.

This mediocre experience, in the two African countries where DANIDA has had the greatest opportunity to understand the economic context in which its investment decisions were made, raises concern about state-loan investments in the rest of Sub-Saharan Africa. DANIDA cannot assume that these countries are able to determine what types of capital investments their economies can manage; and yet DANIDA does not have the resources to make these judgments for or in conjunction with them. Although the state-loan office has undergone a substantial upgrading in project appraisal capacity since the late 1970s, the discrete investment's rate of return is still the main focus. The means for assessing the viability of investments in the sectoral and macroeconomic context—that is, from a *strategic* point of view—do not rest with DANIDA.

Transfer of Danish commodities. On the whole the experience with commodity aid has been far more positive than that with capital goods export, even though Denmark's specialized product mix does not readily lend itself to appropriate import support to a Third World economy. When informed product identification takes place and a suitable channel is found, this type of aid can be an extremely helpful form of "crisis aid." In Tanzania, in fact, it may be a superior form of support to agriculture to a blank check to the Ministry of Finance, since the government has not yet sorted out its priorities for allocating scarce foreign exchange. Finding appropriate channels obviously requires DANIDA to have a strategic sense both of the economy's needs and of the internal channels by which the commodities in question are allocated. The instances of import support to the Tanzanian soap industry show extreme sensitivity to both of these issues. The experience with steel imports has apparently been less positive because these channels were less carefully assessed. In the case of support for chemical agricultural inputs, which has become a regular part of the Tanzanian portfolio and has also occurred briefly in Kenya, policy questions concerning the internal distribution need to be addressed to improve the effectiveness of the aid. Since many donors are involved in input supplies, DANIDA will have to continue to show a willingness to join together with major suppliers in discussing policy reform with government officials.

To increase the potential of commodity aid, the authors would like to see the market open to a wider basket of Danish commodities. Two fairly rigid procedures of aid administration would need to be relaxed for this to occur. First, present inhibitions on the application of tying by and large prevent Denmark from providing commodities that are not viable commercial exports. Second, DANIDA's practice is to send only production inputs; yet in a country such as Tanzania, where many industrial enterprises are not financially viable, it may benefit the intended rural recipients more to provide finished goods than to subsidize their domestic production with Danish intermediate inputs. Were these two procedures relaxed, it would give DANIDA the potential to draw from a number of "home goods" such as consumer durables (bicycles, batteries, and so on).

Of course, in an ideal world, DANIDA would be able to provide whatever commodities it identified as essential to agricultural recovery and purchase them by international tender. But assuming that tied Danish commodity aid adds to the total amount of imported resources, more expensive Danish commodity support (appropriately identified) would still be better than none, and might well have a greater economic impact in the recipient country than those Danish products which are internationally competitive. This principle is already well established for subsidized Danish agricultural commodities channeled through the food aid programs of the EEC and the World Food Programme.

Enthusiasm for the potentials of commodity aid does not, however, extend to countries that are not main recipients of Danish aid. In these cases, the state loan office's policy not to move into commodity aid is probably a sound one. This reluctance is based on the grounds that the absence of a DANIDA mission in the country would make the transfer impossible to monitor (in line with perceived accountability requirements). The issue is seen less as one of monitoring than one of DANIDA's ability to appropriately identify the economy's needs. With proper identification, monitoring is necessary only to verify, not to steer, the domestic allocation of the goods in question.

Transfer of Danish know-how. In Denmark it is a common perception that technical assistance is one of the strengths the country has to offer, and this is certainly reflected in the composition of many projects reviewed in this study. Happily, there seems to be no cultural barrier to close cooperation between Danish technical assistance personnel and personnel in East Africa. The effectiveness of technical assistance-based projects, therefore, has depended on how good the match is between the abilities of the Danish personnel and the needs of the recipient economy. That this match is not always satisfactory is detected in a review of the three main types of projects which have the transfer of knowledge as a primary aim: livestock, financial management, and engineering.

The potential for Danish livestock expertise to have a positive impact is greater in Kenya than in Tanzania. In Kenya, there has been a very positive interaction in the area of cattle disease control, and there are signs that incipient work in fodder development can also have a good payoff. In Tanzania, the investments in veterinary medicine education seem fraught with problems. The difference in the effectiveness of these aid interventions hinges on the

differing function of cattle in the two economies, as already noted. The Kenyan case more closely approaches the conditions of European livestock rearing, while the Tanzanian case still largely conforms to the pattern of a tropical subsistence economy with livestock as a savings and insurance device. Unless some expertise in the management of the latter type of livestock sector is acquired, the future contribution of Denmark in this area will remain limited.

A number of Danish projects concerned with financial management have had important advisory components. Danish experts in this field have been able to provide organizational advice adapted to a range of institutional forms. But the success of the intervention has depended on a correct assessment of the need for or relevance of this type of input in the context of a particular project. In Tanzania, this type of aid was channeled through the cooperative project. In all likelihood, most of the advisors to the regional cooperatives up to 1976 when cooperatives were abolished made very little difference because they were placed in nonviable institutions. In Kenya, those aspects of the cooperative project that focused on marginal areas had similar problems, with the result that expensive advice was sown on barren ground. In contrast, the support given to economically viable cooperative activities in the two countries seems to have constituted an important Danish/Nordic contribution. This has been most visible in Kenya, where institutional stability has allowed the project to provide sustained support to management practices in higher-potential cooperative societies and unions, and to the development of a cooperative banking system. In Tanzania, *policy* instability eroded the earlier years' effective support to the cooperatives in highly productive areas. Village bookkeeper training, which began subsequently, seems to have been less susceptible to the turbulent institutional environment and hence more successful. Though the evaluation material on the Kenyan Farm Inputs Supply Scheme does not provide adequate information to draw firm conclusions, it would appear that this project, run with a core team of financial advisors, had the same pitfall as the cooperative project in Kenya, using an inappropriate mechanism for assisting marginal producers. Advisors to the Cooperative Bank, in contrast, have proved highly valuable in helping to develop that institution on sound financial principles.

While Danish capital goods exports have a fairly restrictive technology, the engineering sector itself has shown the capacity to be flexible, if not neutral, on the question of technology transfer. The usefulness of the Danish contribution in this regard has depended on DANIDA's ability to define the appropriate parameters for engineers to do their work. Two examples of successful infrastructural activities have been the Rural Access Roads Program in Kenya and the Rural Water Supply (Southern Highlands) project in Tanzania. In the roads program, the project design specified the use of a labor-intensive technology for road construction; an appropriate method was then developed and executed by the project engineers. In the water project, project specifications took into account the likelihood that recurrent foreign exchange would be scarce and therefore stipulated that the schemes should be based on gravity-drawn rather than pump-drawn sources. This contrasts with the less successful donor-financed schemes in Tanzania in the early 1970s, when engineers, given a free hand, leaned toward schemes using diesel pump technology (which typically has lower initial establishment costs than the gravity-drawn technology).

Comparison of the East African experiences. To conclude this section, it is useful to compare the impact of these various resource transfers on the two East African recipients. In each of the categories, it was possible to identify successes as well as failures. Grouping the successes by country, one finds a striking imbalance in favor of Kenya's portfolio, the smaller of the two.

In Tanzania, the bookkeeper training element of the cooperative project lights up like a gem in an ashen project landscape. Commodity aid for chemical inputs and soap seems to have been appropriate "crisis aid," and undoubtedly has had some short-term impact in stemming economic deterioration. Finally, the new Cooperative Project is set up to have a substantial potential impact, that will, however, depend on the outcome of policy debates within the Tanzanian government.

The successes in Kenya are many more. The multifaceted support to the production, research, processing, and marketing aspects of the dairy sector might top the list, but certainly the coffee and the pyrethrum cooperatives have benefited as much as the dairy cooperatives from the Nordic Project's strengthening of their general management systems. Another cornerstone in the country's cooperative edifice has been laid by DANIDA's support to the Cooperative Bank's staff development and to the strengthening of its operational procedures. Area-specific projects also may have a longer-term impact. The Rural Access Roads Program and the Rural Development Fund have in different ways contributed to the country's rural infrastructure. Although it is premature to give a final verdict on the more integrated approach being carried out in Mutomo, Taita, and Taveta, the preliminary results and the flexible learning approach to harnessing locally controlled resources leave ample room for optimism.

The reason for the different success rates in the two countries may be attributed to historical factors. In considering Kenya's dairy sector, it is appropriate to recall the truism that nothing breeds success like success. The climatic conditions, genetic resources, organizational and spatial forms of production and marketing, price incentives, credit availability, and not least the "see, but not touch" policy of the colonial era[29] has resulted in one of the few striking examples of successful livestock development in tropical Africa.[30] In other words, the Danish investment in milk processing came to fruition because of all the features that were already in place.

An adequate assessment of the resource base was an important element in DANIDA's dairy investments, as it has been in other successful interventions. But why does one find more of this in the Kenya than in the Tanzania portfolio? An historical irony seems to be at play, having to do with the interaction between the donor—Denmark—and the political systems of the two recipient states. As noted earlier, DANIDA's dissimilar perceptions of the policy framework in the two countries led to different approaches to project identification. The Tanzanian government's basic orientation was seen to fit with DANIDA's own poverty focus. This led to a more laissez-faire attitude to the precise use of Danish funds, meaning that critical resource assessment fell by the wayside. In Kenya, DANIDA took a more selective approach, seeing itself as the initiator and guardian of a poverty focus through its project activities. Greater institutional and resource assessment was a spillover effect from the more critical scrutiny of the feasibility of alleviating poverty.

Denmark's "compensatory" reaction pattern was compounded by operational necessities stemming from the different structures of the two economies. The broader the scope and the more centralized the implementation of a recipient country's policies, the less scope there is for a donor to get involved in niche identification or area-specific interventions. Though both Kenya and Tanzania have had their share of blanket policies that are insensitive to the specific conditions of different areas (as, for instance in cooperative policy), Tanzania clearly surpasses Kenya in the extent of centralized decisionmaking and detailed intervention in the workings of the agricultural economy down to the farm level. Even if DANIDA had wanted to, it could not have replicated successfully in Tanzania the case-by-case scrutiny of Kenyan projects. The systemic weaknesses in the Tanzanian policy and institutional environment can only be addressed more directly through policy conditionality, a task for which DANIDA is not well equipped.

To conclude this summary, we would highlight the basically *supply-side* nature of Danish aid to East African agriculture up to the present. To a large extent, its contours have been shaped by Denmark's own domestic and international concerns—whether cultural, economic, or political. Seen from the perspective of maintaining a comprehensive aid constituency and of increasing real aid levels, the Danish aid policies may be regarded as something of a masterpiece. The record with regard to aid effectivenes is somewhat more spotty, however. When aid has been effective, it has met at least three conditions on the *demand side*: it has corresponded to the needs of the intended beneficiaries, has added an incremental but critical resource to a local constellation of otherwise underutilized factors of production, and has been in confluence with the national policies of the recipient country.

More often than not, at least one of these conditions was absent. Making aid to agriculture more effective requires a better fit between the resource base of the donor and the needs of the recipient. This in turn requires, first, a better identification of the demand situation; second, a realization that the donor's resource base is not a totally fixed parameter, but can itself be developed to respond to the identified needs; and third, a restructuring of some of the types of aid to ensure better delivery.

Toward More Effective Aid to Agriculture: Some Contradictions and Resolutions

Some of the obstacles to effective agricultural aid are shared by all donor and recipient governments; they arise because understanding of the developmental process has been embryonic or incomplete. But in addition there are some institutional constraints to greater aid effectiveness that are particular to the Danish methods of aid allocation. These constraints arise from contradictions inherent in the various objectives or motivations that have shaped the overall aid policy. Section I laid out the three constituency-generated objectives of Danish aid related to foreign policy, philanthropic, and commercial interests. Since these motives at times clash—not only with each other, but also with the primary objective of development itself—it is necessary to define a fourth interest that allows a conceptual separation of the development objective from the constituency-generated ones. In this discussion, the term "professionalism" will refer to an exclusive concern with the "demand side" of the equation, completely detached from any cultural, political, or commercial determinants on the "supply side."[31] In determining the "demand side," "professional" analysis cannot disregard recipient government requests, but must assess whether they coincide or conflict with the self-perceived interests of the target population in the targeted agricultural system.

The most significant contradictions among these four types of interests originate in one of three ways: among different interests outside of the aid agency, among different interests inside the agency as represented by different personnel groups or organizational cultures, and internalized in the value system of the individual staff members. These are discussed in turn.

The *first contradiction* lies in the longstanding conflict between commercial and philanthropic interests over the allocational procedures for the tied aid portfolio. As noted earlier, the originally intended recipients of state loans were the middle-income countries. Under popular pressure to make all aid poverty-oriented, this soon gave way to a policy that only low-income countries could have access to these funds. In effect, this compromise maintained the volume of aid benefiting Danish industry while curtailing its outlets. The compromise has greatly handicapped the search for appropriate utilization of Danish state loans. It also necessitates more work on DANIDA's part, since these recipients often have gaps in analytical capacity that the agency must (or ought to) fill.

For main recipient countries, this chapter has already pointed to one possible procedural modification to heighten aid effectiveness and at the same time keep disbursements up: namely, the extended use of tied commodity aid. At the same time, we have questioned the advisability of DANIDA's continued promotion of regular capital-export loans elsewhere in Africa—as neither DANIDA nor the recipients have the capacity to do adequate analysis of the macroeconomic and sectoral context of the investments.

The institutional mechanism by which the Danish capital exporter and the recipient government identify and agree on a DANIDA-financed state-loan contract tend to bias the resulting installations in the direction of oversophistication, overcapacity, and overprice. Of the three involved parties, DANIDA has the least vested interest in such an outcome. But DANIDA seems also to have the least manpower invested prior to the signing of the contract. The representatives of the recipient government tend to choose the most "modern" option. And a private contractor, needless to say, tends to want to secure the largest possible contract.

Ironically, the direct export of sophisticated capital goods through the aid budget to countries as poor as most of the African recipients affords the contractor only a one-time financial shot in the arm. The purchasing power of at least a middle-income country is required to promote the industry's long-term interest in evolving steady, self-capitalizing markets for Danish equipment. The recent opening of the Chinese market to Danish state loans should help considerably in alleviating disbursement problems. But since the pressure to disburse is bound to persist, it would be worth considering lifting the per-capita-income limit of eligibility (and perhaps charging modest interest rates). By extending the list of eligible countries to those able to use Danish technology more effectively, both the recipients and the Danes would be ahead.

The *second contradiction* lies between the growing professionalism of the aid administration and the foreign policy environment that permeates its modes of operation. The foreign policy platform has made DANIDA conflict-avoiding.

Yet in order to increase the effectiveness of some aid activities, DANIDA will need to get involved in ensuring that recipient-country policies are conducive to development. With some hesitation, the agency got its feet wet on conditionality in the Tanzanian case (over cement); the experience was painful for relations between the two countries.

In achieving the foreign policy objective of gaining good will through bilateral aid, a generous aid portfolio carries with it a danger of putting the donor in a hostage position; Denmark can only maintain full good will if it does not raise any questions. But project identification and design, and the effective use of import support, are bound to suffer from following the course of least resistance.

The constraints posed by the foreign policy environment on the development of professionalism may well have been the most serious long-term impediment to the effective use of Danish untied aid. Since the Foreign Ministry subsumed DANIDA upon the retirement of the agency's first director in the late 1960s, this tension has gradually been rising until it finally resulted in a major administrative review, completed in early 1986.

The review made recommendations concerning personnel policies and operational procedures, chief among which were: a longer minimum-time commitment for diplomats wanting to serve in the agency; greater accessibility to management positions for technical advisors; greater emphasis on the functions of the resident missions; and a virtually new emphasis on country studies, strategies, and planning, which would provide specific enough guidance to allow for an effective decentralization of decisions to the missions and to provide foreign service officers with much more *operational* instructions than hitherto. These recommendations, if followed, would resolve the contradiction between professionalism and the foreign policy interests by professionalizing the agency's personnel and modes of operation.

The *third contradiction* lies less in the interests of different groups of people than in an incongruence of values or perceptions within the people shaping the content of Danish aid. This internalized contradiction between professional and philanthropic objectives may be summed up more broadly as a tension between the "Marshall Plan aid paradigm" and the "Albert Schweitzer syndrome." The first approach seeks to achieve the growth-oriented, catalytic effect of America's postwar aid to Europe, where the goals were set in terms of GNP growth, and the litmus test was that the aid made itself superfluous after a short time. The second approach aims to alleviate human suffering and uplift human dignity as ends in themselves.

To varying degrees, all Western aid agencies have devoted attention to meshing these two strands of thought—the widely endorsed Basic Needs Strategy of the mid-1970s being the most explicit push to integrate the two. The point here is not that there *need* be an incongruence, but that the present course has led to decreased effectiveness in meeting either objective.

In the DANIDA portfolio, the incongruence expresses itself in two ways, depending on whether the activities are oriented primarily toward production or toward social services. In the first category, which includes the agricultural sector, we have found several cases of the Albert Schweitzer syndrome having a muting effect on productivity increases. In the second category, although we have not examined the social services portfolio in detail, it does seem that elements of the Marshall aid paradigm have had disruptive consequences in the design of welfare-enhancing activities.

To elaborate, it appears that some agricultural projects that have had an explicit poverty orientation—and thereby have focused on marginal producers—have not proved to be either replicable or sustainable. Support to marginal cooperative societies and to the Farm Inputs Supply Scheme (FISS) in DANIDA's Kenya portfolio are cases in point. The Christian Michelsen Institute arrives at the same conclusion in its evaluation of Kenya's Rural Development Fund, observing that "the widespread belief that the promotion of production-oriented projects is a convenient shortcut for uplifting the rural poor seems to be based on unrealistic assumptions."[32]

Moreover, it is likely that DANIDA could have done more for the same money to address the welfare concerns of these population groups had it not attempted to focus directly on production increases. A single female head of household in a semiarid area of Kenya is much less likely to be helped by the purchase of a subsidized plow from an FISS store than by health and education programs that increase the likelihood of her children's survival and their chances for gainful off-farm employment. Moreover, production-oriented projects designed to uplift the rural poor frequently tend to increase their dependence on external resources and conditions beyond their control. This highlights the importance of selecting appropriate technologies and methods of reaching poor farmers. One of the main reasons why the authors are optimistic about DANIDA's approach in Mutomo, Taita, and Taveta is precisely because it focuses on developing resources that are under the control of the producers themselves.

As noted, social services projects weigh heavily in DANIDA's East African portfolio, particularly in Tanzania. The problem with these investments has to do with the time frame; the Marshall aid litmus test still appears to be applied; for DANIDA, the ideal social project seems to be one that local authorities can take over after the initial aid-financed capital investment.

During the recent crisis in Tanzania, DANIDA has been extremely flexible in assuming the recurrent costs of programs in both health and education (the former through drug supply and the latter through a large school maintenance program). Nevertheless, it has yet to make explicit the long-term commitment which involvement in the social service sector implies. To be effective, DANIDA (or another donor) might need to be in the health sector for up to two decades, during which time institutions could be built up and resources made available. Short of this, a stop-gap intervention to provide essential drugs for a few years can only temporarily postpone the time when the clinics are empty. More broadly, the implication is that if one wishes to adopt welfare objectives in the aid program (an option with which this chapter does not take issue), a long-term commitment to—and perhaps even adoption of—a sector may be essential.

To summarize, while the stability of Danish aid is dependent on maintaining the existing broad, three-legged basis in domestic interests, the effectiveness of that aid in attaining the overreaching objective of development depends on a higher degree of disentanglement of these interests. What this boils down to is *maintaining the balance in the overall portfolio*—but generally not in the design of individual projects or programs.

Notes

1. This chapter follows the OECD convention in defining aid as official development assistance (ODA), which has a grant element of at least 25 percent. This encompasses all flows from DANIDA, which are full grants or "soft loans" with a grant element of 76-86 percent. It excludes export credits and other official flows such as equity contributed by the Danish Industrialization Fund for Developing Countries (IFU).

2. This by no means implies that Danish diplomats shy away from conflict. Given instructions or well defined guidelines, they will (in the words of one of them) "fight like scorpions." Aid policy generally is not, however, an issue on which the Danish Ministry of Foreign Affairs would want to risk a confrontation with recipient governments.

3. In its 1982 and 1984 annual reports to DAC, DANIDA estimated that approximately 60 percent of its total bilateral grant assistance was used to purchase Danish goods and services.

4. Kjeld Phillip, a prominent figure in Danish aid circles, was head of the commission that recommended the establishment of the Community.

5. The mustering of additional, quick-disbursing flows of commodities out of the tied aid budget accounted for most of this increase in aid.

6. Tanzanians have coined this phrase to refer to the group of important bilateral donors whose aid has been on the softest terms and most in line with the Tanzanians' own sociopolitical philosophy.

7. Uma Lele and L. Richard Meyers, "Growth and Structural Change in East Africa: Domestic Policies, Agricultural Performance, and World Bank Assistance, 1963-86, Parts I and II" DRD Discussion Paper Nos. 273 and 274 (Washington D.C.: World Bank, 1987).

8. The measurement tools have varied between the countries. On the whole there has been considerably more attention to measurement in Kenya, reflecting the fact that land resources are a more pressing constraint there.

9. In Western and Rift Valley provinces, the higher quality areas are distinguished by their rainfall patterns, although the soils are poorer, and less suitable to some of these export crops than they are to improved maize varieties.

10. Many would argue that this could include subdivision of the larger farms in the higher-potential areas that are relatively extensively farmed.

11. In Yaw Ansu, "Macroeconomic Shocks, Policies and Performance: A Comparative Study of Kenya, Malawi and Tanzania—1967 to 1984," MADIA Working Paper (Washington D.C.: World Bank, 1986), Ansu documents the progressive overvaluation of the TSh from 1972 to 1984, during which time the KSh broadly kept in bounds of its earlier real value (pp. 109-17; calculations based on purchasing power parity real exchange rates). Devaluations of the TSh since spring 1986 have partially redressed the imbalance, but the currency remains considerably overvalued in the opinion of most analysts.

12. Hanak and Loft, "Danish Development Assistance," 1987, op.cit.

13. Currently the minimum for pasteurized milk is 20-30 tons/day = 2,000 liters/hour, and 250 tons/day for UHT milk.

14. Jack Frankel, "The Role of Livestock," background paper to the Tanzania Agricultural Sector Report (Washington D.C.: World Bank, May 1982).

15. In some Ethiopian and Kenyan pastoral areas, ILCA has been conducting on-site trial research on the types of crops that could supplement the nutritional intake of calves, for instance.

16. The fact that the Tanzanians did not object to using aid resources in this manner also may relate to the political implications of this project vis-a-vis a preventive strategy. Precisely because of their marginality, veterinary programs tend to imply relatively nonthreatening kinds of measures. By contrast, preventive and nutritional measures typically would demand sweeping changes in land use or stocking policies, as well as considerable restructuring of the administrative machinery dealing with animal health care.

17. The upgrading of the Morogoro campus to an independent university several years ago, as well as the fact that the bulk of investments in facilities have already been made, suggests that this is the only politically feasible assumption.

18. Danida reports that, in the second half of the 1980s, there has been an unofficial shift in the curriculum in favor of preventive health courses. Although this change is surely welcome, it does not appear to address the fundamental, structural alteration of the objectives of the program (such as composition of manpower output, or research orientations of the Tanzanian teaching staff), which we argue is necessary to attain substantial social benefits, and not just a marginally improved performance on this investment.

19. The colonial tradition lay with the granting of monopsony rights, though it is probably true to say that this was done with a somewhat greater assurance of a society's viability than was the case following independence.

20. In Kenya, there is, for instance, a reluctance to relax the regulations for the parts of the cooperative system that have become quite sophisticated. In Tanzania, the cooperatives which have been reintroduced in the early 1980s have built-in government and party control measures at the union management level, which suggests that an independent movement is at best a long way off.

21. In "The Evaluation of the Kigoma Rural Development Project," M. Loft, E. Hanak, and A. Ndyeshobola (University of Dar es Salaam Economic Research Bureau, 1982) noted, for instance, that a large number of bookkeepers had found work in a range of regional activities, both private and public.

22. On the technology, see Erik Nissen-Pedersen, *Rain Catchment and Water Supply in Rural Africa: A Manual* (London: Hodder and Stoughton, 1982).

23. Prior to 1984, the pricing system was also distorted by a transport subsidy heavily subsidizing consumption in distant regions.

24. As in Kenya, the repayment for seasonal credit is collected as a deduction from crop payments to borrowers. In the Tanzanian case, the crop parastatals responsible for handing over these funds to CRDB were frequently remiss. In addition, it was not uncommon for them to continue to make in-kind input credit available to farmers with outstanding debts to CRDB. World Bank, *Tanzania Agricultural Sector Report* (August 1983: Ch. V).

25. For a recent evaluation of the OPS technology see R. Kaplinsky, *Sugar Processing: The Development of a Third World Technology* (Intermediate Technology Publications, 1984).

26. World Bank, *Tanzania: An Agenda for Industrial Recovery*, Report No. 6457 TZ, June 1987.

27. For a full discussion of the fourth category, see the full report from which this chapter is drawn: Hanak and Loft, "Danish Development Assistance," 1987,op.cit. In short, the analysis shows that Denmark cannot necessarily solve its own expertise shortages by farming out the activities to the specialized agencies. To avoid inappropriate projects (like the ILO road project in Tanzania), DANIDA will need to assess carefully the capabilities of each agency to do the work it does not feel it can do itself.

28. A third problem, inappropriate factor intensity of investments, is noted in the main report and may be exhibited by capital-intensive grain storage facilities in Kenya, a labor surplus economy.

29. Philip Raikes, *Livestock Development and Policies in East Africa* (Uppsala: Scandinavian Institute for African Studies, 1982).

30. Kenya's unusual success is contrasted with other experiences on the continent in Hans E. Jahnke, *Livestock Production Systems and Livestock Development in Tropical Africa*, Kieler Wissenschaftsverlag VAUK, 1982.

31. This is clearly an "ideal" in the Weberian sense, hopefully as analytically useful as it is empirically empty!

32. Christian Michelsen Institute, "Kenya's Rural Development Fund: A Study of its Socio-Economic Impact," August 1985, p. 70.

Chapter 3

Swedish Aid to Kenya and Tanzania: its Impact on Rural Development: 1970-84

MARIAN RADETZKI

Note

It should be noted that this study was prepared between late 1985 and early 1986, using documentation available at that time. A number of important policy changes whose beginnings were barely just about perceivable at the time of the preparation of this paper have come to full fruition in the period since its completion. In light of the experiences of the latter half of the 1980s, Swedish aid programs to East Africa have shifted toward a lesser emphasis on project lending, an expansion of import support and of cofinancing arrangements with other development institutions, and more frequent employment of conditionality where aid is granted—provided that the recipient country undertakes essential policy reform. The evaluation of aid efforts has also received much greater attention in recent years. It should be noted that the thorough revision that would be needed to bring these changes into account has not been practicable (although the statistical tables have been updated). Therefore some of the conclusions and criticisms expressed in the study do not apply to the Swedish aid performance of the late 1980s. The valuable research assistance from Apollo Njonjo and Lars Rylander in the preparation of this chapter is gratefully acknowledged by the author.

Swedish Aid to Kenya and Tanzania: Its Impact on Rural Development: 1970-84

This chapter analyzes the impact of Sweden's aid to Kenya and Tanzania in the field of rural development, mainly during the period 1970/71–1983/84.[1] Six projects--comprising support to rural water and rural health in both countries, to land care in Kenya and to forestry in Tanzania—are the focus of the investigation. These projects account for an overwhelming share of Swedish aid for rural development in the two countries, as well as for 36 percent of total Swedish disbursements to Kenya and 20 percent of those to Tanzania.

To put these endeavors into a context, the characteristics of the overall Swedish aid effort are also surveyed. An attempt is made to generalize on the basis of the six project analyses, as well as on the overall evidence of the Swedish assistance endeavors.

The Quantity and Quality of Sweden's Overall Aid to Kenya and Tanzania

Swedish aid had a relatively late start. Prior to 1962, public aid involvements were insignificant.[2] The volume rose during the 1960s, and in 1969, the global total reached $100 million. At 0.43 percent of the country's GNP, official development assistance in that year for the first time exceeded the average share of the DAC group. There followed a period of very fast expansion. Since the mid-1970s, Swedish foreign assistance has ranged between 0.75 and 1.02 percent of GNP—two to three times more than the average for the DAC group. Aid from Sweden rose from 1.7 percent of the total flows from DAC countries in 1970, to a peak of 5.0 percent in 1977, from which it gradually fell to reach 2.5 percent in 1984. In comparison with aid from other major donors, the flows from Sweden have been characterized by a large, though declining, multilateral share, a high concessionality, and a low extent of formal tying.

Kenya and Tanzania are among the early recipients of Swedish aid. Between 1962 and mid-1984, Kenya had received a total of SEK 1.1 billion and Tanzania SEK 3.8 billion.[3] The two countries together have absorbed around 10 percent of the *overall* aid flow—and 15-20 percent of the *bilateral* flow—from Sweden.

Swedish aid has played a significant role in the national economies of the two countries. Throughout the period under scrutiny, Swedish disbursements corresponded on average to roughly 0.5 percent of GNP in Kenya and 1.5 percent in Tanzania. Sweden also played a prominent role among donors to the two countries. In the early-to-mid-1970s, it accounted for about 15 percent of total aid receipts in Kenya and some 25 percent in Tanzania. More recently, this prominence has been reduced.

Measured in real terms, however, the Swedish flows to

Table 1
Sweden's aid disbursements to Kenya and Tanzania, 1970-86 (SEK millions and percentages)

	70/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
Kenya																	
SEK millions	18.5	24.3	36.0	74.6	81.5	86.1	85.6	79.3	76.8	101.3	90.2	87.2	99.4	105.6	169.0	156.9	127.8
percent	2.6	3.3	4.0	5.7	3.7	3.5	2.9	2.3	7.4	2.5	2.1	1.7	1.8	1.8	2.7	1.9	1.8
Tanzania																	
SEK millions	51.1	65.9	96.6	132.7	202.6	232.6	278.4	255.6	255.6	346.5	310.6	144.5	458.2	464.7	494.3	524.8	517.7
percent	7.2	9.0	10.6	10.2	9.2	9.4	9.6	7.4	9.1	8.5	7.2	8.9	8.2	7.7	7.8	7.1	7.1

Source: SIDA, *Bistand i siffror och diagram* (Aid in numbers and figures), 1982 and 1983; SIDA Annual Reports, 1970/71-1976/77.

Table 2
Kenya and Tanzania: Share of Swedish aid in GNP and in foreign aid receipts (percentages)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Kenya																	
Swedish aid/GNP	0.2	0.3	0.4	0.8	0.7	0.7	0.6	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.2
Swedish aid/Total aid	5.4	7.0	10.4	17.7	15.4	16.8	12.3	10.8	6.9	6.8	5.2	3.6	3.3	3.8	3.5	4.5	3.2
Tanzania																	
Swedish aid/GNP	0.7	0.8	1.2	1.7	2.0	1.8	2.5	1.8	1.7	1.8	1.5	1.5	1.4	1.3	1.2	1.2	2.6
Swedish aid/Total aid	17.6	21.1	34.5	30.3	27.9	20.2	18.6	13.4	12.4	12.1	10.9	11.6	10.4	11.7	9.9	10.1	15.6

Source: OECD: Development Assistance Committee Review, annual; supplemented by SIDA, UN, and World Bank statistics.

Table 3
Tied aid composition and relative importance (SEK millions and percentages)

	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
Kenya										
Tied Aid as percentage of:										
Total Import Support	100.0	71.9	70.2	76.5	55.3	77.5	100.0	100.0	100.0	
Total Aid	7.2	9.9	10.2	22.8	10.0	18.9	7.3	13.6	9.4	
Tanzania										
Tied Aid as percentage of:										
Total Import Support	51.2	50.1	37.6	58.3	34.4	67.2	78.7	83.9	70.6	72.5
Total Aid	5.8	11.5	9.5	12.9	12.8	21.8	26.7	28.0	31.1	25.5

Source: SIDA, *Bistand i siffror och diagram*, annual; SIDA's Accounts Department.

the two countries have declined. Thus, the 1980 SEK value of aid received by Kenya rose from 51 million in 1971/72 to a peak of 136 million in 1973/74, and then declined, to reach 67 million in 1983/84. The flow to Tanzania first rose from 137 million in 1971/72 to 373 million in 1976/77, and then stagnated below the peak. In 1983/84, it was 304 million.

Terms

Two dimensions of the terms will be considered: the grant element and the tied aid proportion. Since 1975/76 Swedish aid to Kenya and Tanzania has been 100 percent in grant form. Prior to that, a proportion of aid was provided as loans on very soft terms, but these loans were written off in 1977/78. Until that year, total service payments amounted to 3.0 million SEK in the case of Kenya and 9.8 million in that of Tanzania.

Formal aid tying, first introduced by Sweden in its overall aid program in 1971/72, rose from a trifle of 21 million SEK in the global aid expenditure in 1971/72, to about 600 million SEK in 1976/77, and to more than 1,100 million SEK in 1983/84. The figures for the two latter years corresponded to some 20 percent of the total Swedish aid budget.[1]

Tying to purchases in Sweden was imposed on Tanzania in 1977/78 and on Kenya one year later, but was limited to the general import support category of aid. To begin with, the recipients were free to choose any goods and services exported by the donor country. In the early 1980s, however, there have been increasing pressures to impose *double* tying, that is, the right for the donor to determine the composition of goods to be supplied from Sweden. As in the global Swedish aid program, the formally tied aid component has reached about 20 percent of total disbursements to Kenya and Tanzania in recent years.

In addition, a variety of aid practices in reality amount to informal tying. This emerges most clearly in the use of personnel. The expatriates engaged in Swedish aid endeavors have been almost exclusively recruited in Sweden. The cost of such personnel amounts to some 15-20 percent of total aid disbursements, substantially raising the proportion of aid that is tied in practice.

Sectoral Distribution. The sectoral distribution of Sweden's assistance to Kenya and Tanzania appears in Appendix Tables 1 and 2. A snapshot view of the most important sector shares is provided in Figures 1 and 2.

In *Kenya*, until 1971, agriculture, rural development, and education dominated the flows. In the 1970s, the sectoral allocation was greatly diversified. From about 1980, there was again a sectoral concentration, with agriculture, rural development, and import support accounting for the lion's share. Other noteworthy insights emerging from the chart include:

—The small share and trend decline in the allocations to agriculture.
—The large increase of the rural development share—explained primarily by the expansion of water and health programs.
—The continuous decline in aid to education.
—The very fast growth since the late 1970s of a predominantly tied import support program.

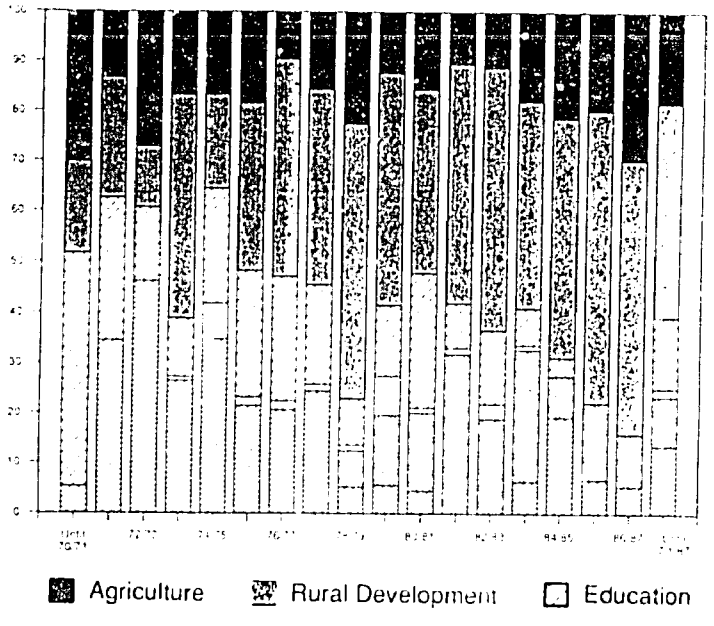
In *Tanzania*, the increasing unimportance of agriculture and rural development contrasts sharply with the developments in Kenya. Industry has accounted for the largest growth in the sectoral shares since the late 1970s. The "modern" sector (mainly industry and import support) accounts for more than 50 percent of total aid allocations.

Project Aid Versus Other Assistance

In the early years of Swedish aid, project assistance dominated the flows. Over time, there has been a large shift to less specific activities in both countries, but the share of project aid has remained lower in Tanzania throughout the period.

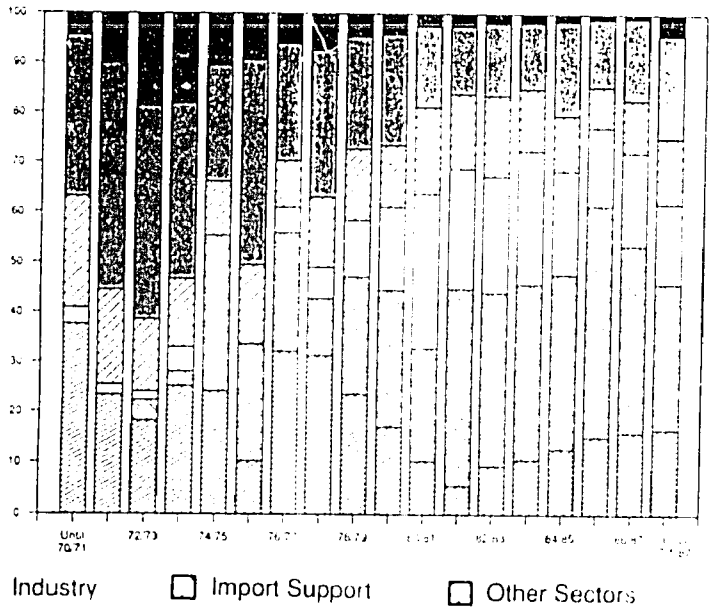
The lesser flexibility of project aid in terms of allocation—together with the fact that a larger proportion of aid to Kenya was made available in this form—in part explains the lower efficiency in disbursing aid commitments to Kenya. Only 76 percent of total aid committed to Kenya between 1980/81 and 1983/84 was actually disbursed in the period. For Tanzania, the figure was 99 percent.

Figure 1
Sectoral distribution of SIDA aid to Kenya, until July 1, 1987



Note: Rural development includes, in order of importance, assistance for rural water, forestry, cooperatives, health, and infrastructure.
Source: Appendix Table 1.

Figure 2
Sectoral distribution of SIDA aid to Tanzania, until July 1, 1989



Note: Rural development includes, in order of importance, assistance for rural water, forestry, cooperatives, health, and infrastructure.
Source: Appendix Table 2.

Swedish Aid Allocations

The Goals and Objectives of Aid

The fundamental rationale for Swedish aid has been a feeling of solidarity with the poor people in low income countries. The justification for Sweden's involvement was strengthened by the popular perception that Swedish aid could in some measure counterbalance the capitalist and neocolonialist forces that threatened equitable development in poor countries. There was also a strong belief that Swedish experience could be usefully applied in the development process. Finally, development of poor nations was regarded as a prerequisite for global peace. These motives explain Sweden's preparedness to spend—compared to other donors—a very high proportion of its GNP on foreign assistance.

Since the early 1970s, official documents have professed that Swedish aid programs have four goals:[5]

- Resource growth;
- Increased economic and social equity;
- Economic and political independence; and
- Development of democracy in society.

The relative weights attached to the goals have varied over time. (The goal of democratic development has not had a prominent role in determining aid policies in main recipient countries over the period examined in this study.)[6] The dominance of the resource growth goal in the late 1960s was replaced in the 1970s by growing concerns about equity.[7] Interestingly, this coincided with a corresponding shift in the internal economic policies of Sweden. However, under the strains of economic stagnation or decline that affected both Sweden and its aid recipients in the 1980s, the resource growth goal is coming back into focus.

The official goals provide a general idea of the intended direction and thrust of Sweden's aid, but they lack the precision needed for operational guidance. In response, SIDA has issued over the years a series of papers identifying the intended structure and purposes of, for instance, its support for rural water or rural health worldwide.[8]

Other objectives have at times also conditioned Sweden's aid (much as they have conditioned the activities of other donors). One objective has seen the role of aid to be primarily in promoting investment. The presumption has been that Sweden could withdraw once the investment phase, defined in a broad sense, had been completed, and that national resources could assure continued operations. Promotion of recipient independence and reluctance to enter into perpetual engagements have been the rationales behind this attitude.

Another objective that gained prominence in written policy statements of the 1970s but faded into the background in more recent years was that recipients should have complete freedom in determining the allocation of aid; in practice, this objective was never fully implemented.

A further objective, primarily concerned with the donor's interests, has been to give preference to the use of Swedish resources in aid programs. The growth of tied aid after the mid-1970s is explained by the economic stagnation and the current account deficits experienced by Sweden at the time. The result was a weakening of the altruistic aid

constituency and a strengthening of the groups that wanted to use aid to promote Sweden's commercial interests. An additional factor was disappointment about the unwillingness of other donors to untie their aid flows.[9]

There has been very little public discussion in Sweden of existing trade-offs among aid goals. The obvious possibility of goal conflicts—and of the lesser achievement of any one goal if several are pursued at the same time—often was not recognized, even in central policy statements.[10] The image of harmony among the different goals, and the costs of the overall program (in terms of the efficiency losses implicit in the simultaneous pursuit of all of them), may have been the price for attaining a broad consensus behind the large and generous assistance program.

Two instruments have been employed to attain the professed goals and objectives.

The *first* has been to choose countries whose domestic circumstances assured a high degree of goal attainment. On these grounds, Cuba and Vietnam were added to the list of recipients, because of the egalitarian policies that they were seen to pursue—as were Botswana, Lesotho, and Mozambique, because of the threat to their independence caused by the policies of the United States and South Africa. Choice of countries with the "right" development policies became particularly important during the 1970s, when the recipients were given increased freedom in the use of aid. The reluctance to break off existing aid relationships induced a redistribution of aid among established recipients in favor of those whose development policies were in line with Swedish goals.[11]

The *second* instrument to promote Swedish goal attainment was the selection and design of activities. This instrument was more intensively employed in recipient countries whose development policies were thought to be out of line with the Swedish goals. In several cases, the promise of support was used as an inducement for policy reorientation.

The practical application of these instruments was not always very straightforward. In some cases, country choice or country emphasis was motivated by the belief that the recipient's policies (for instance, Cuban and Tanzanian policies to even out income distribution) assured a "high productivity" for Swedish aid in terms of its goals. In other cases, the fact that a goal had not been met was used either as an argument in favor of aid or against aid—without explicit consideration of the impact of the aid flow on the goal attainments (with Botswana's lack of economic and political independence being a case in favor, and Kenya's uneven income distribution being a case against). This ambiguity might well be due to the fact that the goals were used *ex post* to justify country choices that in effect had been made on other grounds.

The selection of aid activities was determined by a variety of factors, of which some were clearly related, but others less so, to the Swedish goals. The most important of these factors are listed below:

- *The recipient government's requests.* As noted, this was a leading principle during the 1970s, although its application was somewhat limited; the sectoral shift from rural development and agriculture to industry in Tanzania in the late 1970s reflects this factor at work.
- *The donor's assessment of what is good for the achievement of its goals.* Support for rural water and rural health are illustrative of Swedish initiatives motivated by the donor's perception that public services to poor population groups constitute a crucial component of development.
- *Donor belief that a certain activity is neglected.* Until the early 1970s, support to family planning in Kenya was pursued primarily on this ground. Support programs for women's activities in both countries have come into being mainly because of the donor's perceptions.
- *Special competence possessed by the donor country.* A number of the Swedish assistance ventures, including support to cooperatives, vocational training, forestry, and hydropower, have been motivated on this ground. The donor preferred them because they reduced the strain of aid on its balance of payments. The recipient favored such choices both because the donor's competence was believed to assure efficient execution and because a compliance with donor wishes smoothened the aid relationship.
- *Supplies available in the donor country.* The most obvious example of this rationale is the import support tied to purchases in Sweden that has been extended to Kenya and Tanzania since the late 1970s. Swedish supplies and competences sometimes resulted in inappropriate technology choices. Examples include grain storage in Tanzania, and the diesel-powered rural water installations in the two countries, both of which proved unserviceable because of inadequate technical facilities in the recipient countries.
- *The executing capacity of the donor agency.* Constraints in SIDA's administrative capacity have led both to the preference for large-scale projects permitting the handling of sizable amounts of money per administrator, and to the shift from project to program support in both countries.
- *Donor collaboration.* The desire to collaborate with other donors has sometimes influenced the content of Swedish aid. For instance, Nordic collaboration managed by Finland has involved Sweden in an agricultural venture in Tanzania. In 1984, as the crisis in that country deepened, the Nordic aid agencies initiated a much closer coordination of their assistance. Collaboration with the World Bank has been an inducement to the Swedish engagements in the Mufindi paper and pulp complex in Tanzania, and in dryland ranching in Kenya.

In many cases, the ultimate factor determining the content of aid was amplified by another factor. For instance, the recipient requests may initially have been shaped by what the recipient believed the donor was prepared to offer.

Evaluation of Aid Performance

Most of the formal evaluation exercises of Sweden's aid have had a "micro" character. A series of reports from annual joint missions by SIDA and a recipient ministry have evaluated individual projects. These and other similar scrutinies point to achievements and indicate means to overcome observed problems. By describing the projects' outputs, they provide a partial measure of the contribution to resource growth. Few of the evaluations, however, compare the total costs expended with the recorded achievements through a formal cost-benefit analysis at the micro level. While cost-benefit analysis has its limitations (which are taken up later in this chapter), it nevertheless provides a useful framework for making the assessment of

the range of benefits and costs explicit. In the absence of such a formal framework, the evaluations have tended to omit important considerations on both sides of the balance sheet.

The evaluation studies have on the whole not addressed the role of the macroeconomic circumstances of Kenya and Tanzania in determining the climate for Swedish aid—either as regards the effects of the macro economy on project and program effectiveness, or as regards the priorities for aid implied by these circumstances. The discussion of goal fulfillment is usually vague. As noted, the micro evaluations do assess the contributions to resource growth. The impact on equity, admittedly more difficult to measure, ordinarily receives its due in claims that the activities aim at the poorer population strata, but there is rarely an in-depth analysis in support of the claims. The remaining two goals are typically referred to only in passing.

For a donor whose contributions weigh so heavily in Kenya and Tanzania, it would have been valuable to see analytical attempts showing that the set of ventures undertaken, and the chosen mode of executing them, would contribute to development, however defined, better than alternative sets and modes of execution. Equally important would have been efforts aimed at clarifying how the Swedish involvements affect overall national resource allocation—and with what effect on growth, equity, or other development objectives. There is little evidence of such work having been conducted, or commissioned, by SIDA, which, like other donors, has been late to recognize the importance of broader analytical and evaluative work as a guide to more effective aid portfolios.

Several factors probably contribute to the shortcomings in evaluation work noted here:

The *first* is a notion that the recipient governments, not SIDA, are primarily responsible for the evaluation of aid.[12] This may have appeared to be a constructive idea in principle. In practice, the two recipients took very few initiatives toward evaluating Swedish aid.

The *second* is a weak interest in evaluation issues during the 1970s on the part of SIDA's chief executives and the politicians involved with aid policy. During that decade, the growth of Sweden's aid was extremely fast. Efforts were focused on expanded spending, with relatively little time devoted to reflection about past activities. As resource availability was not a constraint, policymakers and executors could afford a relaxed attitude toward evaluation. In this regard, SIDA's experience was in step with that of most other donors.

A *third* factor, closely related to the second, is that adequate evaluation exercises are difficult to undertake and require large inputs of qualified personnel.

Finally, the accounting systems employed by SIDA have not been conducive to facilitating formal cost-benefit evaluation of the Swedish endeavors.

A result of the low status and limited scope of the formal aid evaluation exercises has been a limited feedback from evaluation proper to the aid activities at both the aggregate and individual project levels. Administrative deficiencies within SIDA, including a short institutional memory, have also contributed to this inability to close the feedback loop.[13]

In the 1980s, the growth of aid has been slow, and pressures to improve its effectiveness have increased. Swedish policy statements of the decade stress the donor's role in allocation and evaluation. Under these pressures, the importance of the evaluation function is being reassessed, and the quality of the evaluation exercises improved.[14]

The limited feedback from evaluation obviously does not mean that nothing has been learned. Experiences and perceptions that influence aid can have many other grounds than formal evaluation.[15] The conclusions drawn here about limited feedback of evaluation are called into question in a doctoral dissertation by Kim Forss, "Planning and Evaluation in Aid Organization," Stockholm School of Economics, 1986. Forss argues that the more informal, learning-by-doing evaluations used in SIDA have been valuable inputs into SIDA's operations, and that they have usefully augmented SIDA's institutional memory and knowledge. They may be based, for instance, on mere observation of aid projects, on difficulties in execution, or on impulses obtained, e.g., from other donors. The content of this learning process—and how it has affected aid performance—is discussed later in this chapter.

The Differential Treatment of Kenya and Tanzania

The equity goal has been the most important consideration behind the aid flows to the two countries. The large difference in the size and content of Sweden's aid to Kenya and Tanzania is founded on perception rather than formal analysis of these economies. Official policy documents explain the difference primarily by the importance attached by Tanzania's government to social and economic equality.

The African Socialism as described by President Nyerere had a great appeal to the Swedish aid constituency. Protection of Tanzania against neocolonialist foreign powers assumed special importance after the country's showdown with a group of major aid donors in the late 1960s and provided an opportunity for Sweden to assume a leading donor role. In Kenya, concern about equity was less evident, and the corresponding political opportunities for Sweden did not emerge; hence, Swedish enthusiasm for providing aid was much more muted. Swedish aid authorities did not commission their own studies of the income and wealth distribution in Kenya and Tanzania, but relied instead on the general perceptions in the donor community at that time.[16] Neither did they attempt a thorough macroeconomic analysis to establish the incidence of equity from the internal policies and aid programs in the two countries.

This difference in Swedish perceptions and attitudes is the major explanation of (a) the greater Swedish generosity toward Tanzania, (b) the greater degree of laissez-faire in relations with Tanzania, and (c) the greater share of aid resources allocated to the modern sector in Tanzania. The last two points reflect the donor's trust that Tanzanian policies would assure an overall national resource allocation consonant with the Swedish equity goal.

The idealistic attitudes toward Tanzania prevailed for a long time. It took more than a decade of practical experience for the Swedish donor to perceive fully—and voice—the problems for Tanzania's national development in general and for the Swedish aid effort in particular, caused by Tanzania's internal policies. From 1983 onward, however, official SIDA documents started to express the view that serious negligence on the Tanzanian side, along with inappropriate pricing, trade, and exchange rate policies, had hampered Swedish-financed aid efforts. Swedish attitudes toward Kenya have remained more stable.

Six Experiences with Project Assistance

The purpose of the following account of six SIDA projects is to provide insights and illustrations in support of the more general conclusions about the development impact of Swedish aid. To facilitate comparison, the format of descriptions is by and large the same, and the order of presentation is by subject rather than by country.

Rural Water in Kenya

Kenya's decision in the late 1960s to launch a large program of rural water supply was mainly the result of Swedish persuasion and promise of generous aid.[17] The programs started in 1970. Up to mid-1984, SIDA's expenditure had reached SEK 224 million—accounting for 20 percent of all Swedish aid disbursements to Kenya, and for 38 percent of the flows to agriculture and rural development. Until about 1977, Sweden was the only donor to the sector, and provided around 40 percent of total funds for rural water.[18] More recently the role of Sweden has declined. In 1980/81, the Swedish contribution was about 13 percent of overall expenditures, corresponding to some 30 percent of total aid funds.[19]

Until 1979/80, some three-quarters of the Swedish contributions were expended on construction, with a heavy emphasis on piped supplies[20] in areas of high agricultural potential and above-average income levels.[21] Other activities included technical assistance to the Ministry of Water, training of personnel, and the preparation of surveys and masterplans.

Over the 1970s, a number of controversial issues emerged in this collaboration:

During most of the period, SIDA *has expressed displeasure about the inefficiency of the* Ministry of Water, *through which the* Swedish *programs were executed.*[22] A major reason for the dissatisfaction was the slow progress in construction. For instance, in 1974, the ministry and SIDA agreed that Sweden would finance 75 water installations, to be completed by 1979. In 1983, only 22 of the units had been installed.

Another perennial complaint was that the ministry allocated highly inadequate funds for operations and maintenance. A study published in 1977[23] concluded that on account of such deficiencies, almost one-half of the target population residing within the reach of the Swedish-financed projects did not use the water facilities at all, and that less than 30 percent of this population had access to water facilities that functioned with reasonable reliability.

Later, it was realized that many installations had been delivered with serious faults. Apparently the control function executed by SIDA had not functioned satisfactorily. For example, one water scheme was delivered without water tanks, although tanks were necessary for its operation. Another scheme produced water unfit for human consumption. These faults were the initial and possibly major cause of the malfunctioning of the system.

The issue of water tariffs has continuously marred the relationship between SIDA *and the ministry, and has never been properly sorted out.* The views of both parties have undergone changes over time. The gist of the early Swedish position was that water should preferably be free to the poor, and that any fees imposed should be so low as to be affordable by this group. As the malfunctioning of the system emerged, SIDA began to emphasize a tariff structure that would assure adequate funds for operations and maintenance. The Kenyan position oscillated between proposals for flat and differentiated tariffs. A Kenyan goal was that user charges in high potential agricultural areas should cover all operations and maintenance costs, but given the low level of fees, and the inability to collect them, only a small fraction of the costs was recovered.[24]

The diesel-operated piped systems that were established supplied water through both individual connections and communal water points; the latter, usually more marginally located, were intended to serve the poor. The flat water rates led to excessive consumption through individual connections, leaving little water for the poor. Less money was spent on maintenance of the communal points, so they decayed faster. Many were disconnected on account of nonpayment of the water fees. The discovery that the poor were increasingly excluded from access to water caused great concern within SIDA.

The above issues led to a redirection of SIDA's activities around 1980.[25] Construction of new facilities was sharply reduced. Almost half the funds were reallocated toward meeting recurrent costs in a broad sense—including training of personnel and construction of repair workshops. This helped prevent the further deterioration of the rural water system. However, at the time of writing (mid-1986), there were no reports of any substantial improvement in its functioning. Neither was there any indication that the ministry accommodated SIDA by redirecting the program in favor of the poor.

Beginning in 1984, there was a further reorientation of SIDA's support. The nationwide program was by and large discontinued and replaced by geographically focused activities in the Eastern and Coast provinces. These include rehabilitation of existing installations and socio-technical experiments with communal water at the local level in dry areas. Assurance of active involvement by the local population has been given a very heavy emphasis in these experiments, although it is not fully clear precisely how assurance can be obtained that this is in fact taking place. It is too early to make a judgment about the development impact of these experiments.

The national efforts supported by Sweden have not been very successful. The results of SIDA's institutional support to the ministry continue to disappoint,[26] and the scope of this support is being contracted. Recent studies have revealed that over one-half of the schemes established under the program continue to operate very poorly.[27] One-half of the water produced was lost or unaccounted for. Only a small fraction of the resident population covered by rural schemes could obtain water at communal points. All this is far below the original plans and expectations. The system that has been established is rapidly deteriorating. The technology employed was way above the personnel and financial means of Kenya, given the ambition to cover a majority of the rural population. The water that is supplied benefits mainly the richer population strata. This outcome is very different from the original Swedish intentions.

The shifts in thrust of SIDA's efforts around 1980 and in 1984 were a result of the negative experiences learned by doing. Although this may well be the most promising avenue to follow, it is not evident that the new strategy reflects a systematic evaluation of alternative options (and hence a deliberate choice based on prospects for long-run success).

Rural Water in Tanzania

Swedish support for rural water development in Tanzania began in 1965. Until mid-1984, SEK 484 million had been spent, representing 13 percent of overall Swedish disbursements, and 48 percent of the spending for agriculture and rural development. Until the late 1970s, Swedish support played a very dominant role in the national Tanzanian program.[28] In more recent years, this preeminence has been reduced as other donors have expanded their involvement.

Initially, the Swedish support was very comprehensive. Most important, Swedish thinking played a critical role in the evolution of Tanzanian policies. The crucial document in this respect is the Rimèr report of 1970.[29] Its optimistic conclusions,[30] along with prospects for lavish Swedish support, led the Tanzanian government to adopt a program to provide the entire rural population with free piped water by 1991. The political eagerness to get this program started was enhanced by the attractiveness of rural water as a carrot in the national villagization scheme that the government was launching at the time.

Beginning in 1972, a number of other donors joined as supporters of rural water activities. At the instigation of the government, the joining donors were directed to specific regions. While the nationwide Swedish activities continued, the Swedes concentrated the expansion of their endeavors to three regions on Lake Victoria. By the early 1980s most of Sweden's nationwide programs had been phased out.[31]

The impact of Sweden's aid is hard to isolate. But because Sweden played a dominant role in this endeavor, the national-level statistics do provide a feel for the achievement. The Tanzanian plan to supply free water to the rural population within a 20-year period was clearly unrealistic. In 1984, the facilities installed covered 38 percent of the rural population. However, only one-half of these facilities were functioning,[32] while another 20 percent operated highly erratically.[33] Thus, after thirteen years of implementation, less than 12 percent of the rural population has access to reliable drinking water. The achievement constitutes only a fraction of the original plan. Despite sizable and costly planning exercises,[34] the activities finally adopted were technically inappropriate or misconceived, and inadequate consideration was devoted to the responsibility for operations and maintenance.

Diesel-run piped water facilities have dominated the system. These have proved inappropriate on both economic and technical grounds. As a result of long-lasting foreign exchange scarcities, the availability of diesel has been erratic. Managerial and technical resources for servicing the facilities also have been inadequate. Swedish efforts to build up such competence by providing training have proved inadequate. In the 1980s, the effort shifted toward shallow wells operated by hand pumps. The technical difficulty with shallow wells is primarily due to their deficient water supply during normal dry seasons. Out of more than 3,000 shallow wells established in Tanzania with assistance from the Netherlands and Finland, barely more than one-half were found to operate with reasonable reliability.[35]

Unavailability of funds for operations and maintenance was a major explanation for the malfunctioning of the system. Public financing of the recurrent costs would have been a formidable task, even if appropriate low-cost solutions had been chosen. The cost of the existing system was clearly beyond the government's means. A greater involvement of local communities in the program might have helped in this respect. In fact, local participation has been conspicuously absent.[36] Through most of the period, SIDA's view was that water should be a "free good" to the users. Only in the 1980s did it reverse its position, after realizing that financial involvement by the consumers was a crucial prerequisite for the program's survival.[37]

The anticipated health benefits from clean water have not materialized. Traditional water sources continue to be used—given the erratic functioning of the facilities installed. Moreover, the main beneficiaries of the rural water schemes, contrary to both government and SIDA intentions, have been the relatively better-off rural farmers, traders, and civil servants.[38]

Sweden's regional water development activities began to be implemented only in 1984. No achievements can yet be reported. One component comprises rehabilitation of existing installations. Another component, still at the trial stage, provides selected villages with shallow wells driven by hand pumps, along with commumnity development and health-related support. As in Kenya, there is a great emphasis on local participation. An important goal is to keep recurrent costs low enough to be affordable by the local authorities.

The rural water development program in Tanzania suffers from severe malfunction. Given the low capacity utilization, the cost per unit of water actually supplied is exceedingly high. A continued degeneration of the system is likely. Given its central donor role in this activity, Sweden has to assume a substantial part of the blame. SIDA's actions aroused the government's enthusiasm for launching an unrealistic program. SIDA insisted that water supply should be free. When the inability of the government to operate the system was realized, SIDA withdrew its support at the national level and restricted its activities to narrow geographical areas in a program whose development impact it is too early to judge.

Rural Health in Kenya

Sweden's involvement in rural health started only in 1975, but it had been preceded by health-related activities, including family planning, that were not specifically directed toward the rural areas. Until mid-1984, total expenditures on rural health amounted to SEK 122 million. This accounted for 11 percent of total Swedish aid flows to Kenya, and 21 percent of the flows to the agricultural and rural development sectors.

SIDA's contributions have been very significant in the overall rural health sector expenditures in Kenya. For instance, in the period 1979/80-1981/82, the SIDA programs financed 25 percent of the total.[39] In recent years, Sweden's relative importance has declined as a result of the growing involvement of other donors.

As in the case of rural water, Sweden's involvement in this health sector was preceded by an active persuasion of reluctant recipient authorities, coupled with promises of generous aid.

Construction, rehabilitation, and the equipment of health institutions account for about one-half of total resources expended. The building program, including 2 district hospitals, 23 health centers, and 3 dispensaries, experienced substantial difficulties and delays. Of these 28 rural health facilities, only 9 had been completed by 1984.[40] Realizing that the rural health system was severely deficient in recurrent funds, SIDA changed emphasis in its program by a decision in 1981 to start distributing basic drugs to the rural health facilities.[41]

Family planning and mother/child health care have been central components of Swedish assistance since 1969. For many years, SIDA has been the dominant supplier of contraceptives to the Kenyan family planning endeavors.[42] More recent Swedish endeavors in rural health include the building and running of schools for medical personnel.[43] Since 1982, an experimental program aims at simplifying and cheapening the cost of rural health center construction. A large portion of the aid funds is expended through nongovernmental organizations.

The shift during the 1980s from construction and hardware toward the provision of necessary inputs, management, and other software has been motivated by the emerging evidence that Kenya is unable to service and run the installed capacities. Sweden's aid to rural health is fully integrated into the overall national programs, and its share of the total is far less dominant than in the two water programs discussed above. This creates special problems for evaluation, but some comments can nevertheless be made.

In Table 4, health-related indicators for Kenya are compared with those for Tanzania (in anticipation of the following section) and with the averages for Sub-Saharan Africa. On most counts, Kenya comes out quite positively in the table, but this does not necessarily imply that the overall national or Swedish resource allocation in the health sector is efficient. A recent evaluation by SIDA concludes that "the rural health center and dispensary program and family planning support have been extremely inefficient . . . Insufficient implementation planning, indicated by such [matters] as the absence of objectives and targets as well as an efficient monitoring system" are indicated as the main causes of inefficiency.[44]

At a more general level, one may question the appropriateness of a system originating in the dispensary, through the rural health center, the district and provincial hospitals, and culminating with the Kenyatta National Hospital in Nairobi. In practice, such a system is inoperable because Kenya does not have the resources to maintain and operate it. Moreover, excessively high standards were set for the facilities. Even if this may have been at the instigation of the recipient, the aid agency—given its initiatives and very important role in the endeavor—cannot escape its responsibility for the inappropriate technological choices.

An indication that the present rural health system is beyond Kenyan means is that although only 30 percent of the rural population so far have easy access to the facilities,[45] the system already suffers from financial exhaustion. Despite sizable Danish and Swedish operations and maintenance support, two-thirds of the centers are reported to lack equipment essential for their operation.

In hindsight, both the Kenyan government and the donors agree that a much simpler health system, emphasizing *preventive* medicine, would have been more affordable and cost-effective in terms of survival and health improvements.

The results of the family planning efforts so far have not been very encouraging. In 1985, only 13 percent of Kenyan females of reproductive ages used modern family planning methods. Birth rates have continued to increase.[46] Only in the most recent years has the government come out clearly in support of family planning. This has improved the prospects for the future. The change in attitude could well be the major achievement so far of SIDA's insistence on this activity.

Table 4
Health-related indicators for Kenya and Tanzania

	Kenya	Tanzania	Sub-Saharan Africa
Female life expectancy at birth, 1983 (years)	59	52	49
Percent change from 1965	+16%	+18%	+9%
Infant mortality under 1 year, 1983 (per thousand)	81	97	119
Percent change from 1965	-35%	-30%	-24%
Population per nursing person, 1980	550	3,010	3,148
Percent change from 1965	-69%	+43%	-32%
Crude death rates 1983 (per thousand)	12	16	18
Percent change from 1965	-29%	-27%	-18%
Crude birth rates 1983 (per thousand)	55	50	47
Percent change from 1965	-2%	+8%	+2%

Source: World Bank, *World Development Report 1985*.

Rural Health in Tanzania

Sweden's involvement in the Tanzanian rural health sector has been limited and marginal. Between 1973, when the program started, and mid-1984, SEK 81 million—or barely more than 2 percent of total Swedish disbursements—had been expended. During the 1970s, the program corresponded to 3 percent of the total budget spending in the Ministry of Health.

In the early-to-mid-1970s, the Tanzanian government decided to construct some 300 rural health centers before 1980, and SIDA agreed to contribute by establishing 125 of these units and equipping them with the necessary facilities.[47] This activity, which absorbed close to 60 percent of Swedish disbursements,[48] has been plagued by extended delays and cost overruns of several hundred percent.[49] The operation of the health centers actually established has been continuously plagued by the ministry's inability to provide resources for operations and maintenance. In the early 1980s, a majority of the units were reported to lack essential supplies such as clean water, electricity, or refrigerators. That they functioned at all was due to a massive effort by Denmark and UNICEF to provide the system with essential drugs. SIDA, in contrast, has assumed very limited responsibilities for maintaining and operating the centers that it had established.

Small additional Swedish involvements include technical assistance to the ministry, provision of medical doctors to Tanzanian health institutions, assistance for building hostels for medical students, and the preparation of evaluation studies and health campaigns.[50]

About 30 percent of Swedish rural health aid has been expended on establishing and running the Tanzania Food and Nutrition Center (TFNC). This center is held in high regard both in Tanzania and internationally, and its advice is utilized by several government institutions.[51] A unique feature of this research institution with sophisticated manpower needs is that it is run almost exclusively by Tanzanian employees.

Swedish support to TFNC is intended to continue, but a decision was taken in 1983 to move out of nationwide rural health activities, upon completing the ongoing construction program.

The following judgments of the sector's performance have only a limited bearing on the Swedish endeavors, given the marginal size of SIDA's aid and its close integration in the Tanzanian programs.

As in the case of Kenya, it is instructive to review the key health-related development indicators in Table 4. In most of these, Tanzania, like Kenya, has recorded improvements much above the Sub-Saharan Africa average. As expected, the status in Tanzania is inferior to Kenya's, given the lower per capita GDP level. But while in Kenya the availability of nursing personnel recorded a gain, in Tanzania it deteriorated severely in the 15 years before 1980.

The thrust of the health programs toward rural areas has been impressive. Over the 1970s, the rural share of the total health budget doubled, to attain more than 40 percent in 1980/81.[32] At that time, 70 percent of the rural population had less than 5 kilometers distance to the nearest health institution.[33] However, the severe malfunctioning of the system suggests that it is not affordable by the national economy. The development impact of what Sweden has done is obviously affected by the sector's deficient performance.

The smallness of Sweden's support for operating the health centers is explained in SIDA by other donors' preparedness to provide such support. SIDA's more recent decision to withdraw completely from rural health at the national level has been motivated by a need to reduce the number of sectors in which Sweden is involved. The Swedish endeavors are leaving behind a deteriorating physical structure along with valuable contributions to the training of medical personnel.

In contrast to the above, the support to the TFNC must be regarded as a considerable success—both in terms of institution building and of the value of the center's programs. A key factor explaining the success appears to have been the initial choice of the personnel that have managed the center.

Soil Conservation in Kenya

This is by far the smallest of the six Swedish assistance efforts under scrutiny. The SIDA expenditures amount to SEK 46 million, or 4 percent of the total Swedish aid flows to Kenya. Nevertheless, Swedish initiatives have been instrumental in launching soil conservation activity in Kenya. The program forms part of the agricultural extension services in the Ministry of Agriculture. Sweden is the sole donor at the national level, and its contribution covers about one-half of total costs.

The Swedish involvement started in 1974/75, through the provision of an expert to the ministry; a widened program was gradually conceived under this expert's guidance. Since 1977/78, Swedish assistance has comprised 3-4 experts on a continuing basis and financial support to the Soil Conservation Unit in the ministry. The activities have encompassed:[34]

- Designing suitable soil conservation measures;
- Development of training and education material;
- Training of extension staff;
- Provision of materials and equipment for program implementation;
- Establishment of nurseries; and
- Actual field work.

The implementation involves extension workers going out from the ministry to visit farmers and persuade them to build terraces, plant grass and trees, establish cutoff drains, and undertake other measures on their land to conserve the soil. Simple tools are provided free to farmers. Although soil conservation was practiced in colonial times, it fell into disrepute at independence because of its association with colonial compulsion.

The program has addressed a crucial developmental issue: if no action had been taken, the country would have risked losing a large part of its agricultural potential. By December 1984, 365,000 farms—or about one-half of all farms requiring soil conservation measures—had been cared for.[35] On this count, at least, the program stands out as highly successful.

An overall assessment must also consider a few questions surrounding this relatively new activity. One of these concerns the ability of the program to survive a discontinuation of Swedish aid. The financial support from Sweden has been small, and its import component limited. The technical assistance contribution has involved a relatively simple technology. Hence the Kenyan government should not find great difficulty in taking over, should the Swedes decide to leave. In any case, current Swedish intentions are to stay.

Another question relates to the recurrent features of the program. Avoidance of soil decay requires recurrent visits by extension workers to each farm, to induce the farmers to maintain the conserving installations. Two recent studies of selected districts provide some tentative insights into this issue.[36] While the initial acceptance rate by farmers is quite high, the participation rates in follow-up work are less impressive. Up to 80 percent of the landholders enrolled in the program, but only some 60 percent completed the terracing work. A few years after, only one-third of the farmers continued to maintain their terraces properly. Although a positive net yield to participants is clearly confirmed, the farmers who actually adopted the measures were predominantly from the better-off strata. Some of the poorer landholders had problems in providing the required cash or labor inputs.

Four factors appear to distinguish this relatively successful activity from the other SIDA-supported efforts in Kenya surveyed in this study:

First, the project had a slow start. In contrast with the head-on rush into rural water and rural health, it evolved gradually, after careful consideration of possible alternative options.

Second, the approach is relatively simple. The work is very labor-intensive. Hardly any heavy machinery is employed. The tools used are familiar to the farmers.

Third, there is voluntary popular involvement in implementation. A precondition for this is that the participants perceive the private benefits that they can reap.

Fourth, soil conservation has had determined political support at the country's highest political levels.

Forest Development in Tanzania

The forest activities include industrial forest planting and care, sawmilling and related activities, and village afforestation. They do not include the pulp and paper industry at Mufindi, to which Sweden has contributed financially.

Sweden's aid to this sector began in 1969. By mid-1984, SEK 206 million had been expended—corresponding to 5 percent of overall Swedish aid, and to 20 percent of Sweden's total support to agriculture and rural development. Over long periods, SIDA covered up to two-thirds of

the total Tanzanian development budgets for the forestry sector,[57] and on occasion as much as 90 percent.[58]

The crucial problem is rapid deforestation. The annual sustainable wood production from the 44 million hectares under forest has been assessed at about 20 million cubic meters. However, total wood consumption is about 40 million cubic meters per year. More than 95 percent of this is for fuel purposes.

While overall wood consumption vastly exceeds the output of Tanzania's forests, there is a huge excess capacity in logs and pulpwood. These are obtained from two sources. First, there are 10 million hectares of forest reserves, with an annual output capacity of 5 million cubic meters of logs, and an equal amount of pulpwood. In addition, roughly 80,000 hectares of industrial forest plantations provide an annual yield of 400,000 cubic meters each of logs and pulpwood.[59] Forest reserves and plantations are not intended to be a source of fuelwood supply; in practice, however, a substantial take for this purpose cannot be avoided.

Demand for logs is determined by the requirements of sawmills. In 1985, the demand for logs was about 500,000 cubic meters, of which 150,000 cubic meters was satisfied from plantations. Requirements of pulpwood will reach 300,000 cubic meters when the Mufindi project becomes fully operational.[60] Thus, Tanzanian industrial demand for logs and pulpwood is only a small fraction of the annual capacity of forest supply. This is particularly true of forest plantations. Throughout the period under study, a minor share of Swedish aid to the forestry sector has been expended on training programs and institutional support in the Forest Division in the Ministry of Lands and in the Tanzania Wood Industries Corporation (TWICO), a parastatal holding company for forest processing industries. Remaining Swedish allocations to the forest sector have experienced two fundamental shifts during the 1970s.[61]

Until about 1976, most of the Swedish resources were employed in forest plantations. SIDA's activities financed the establishment of some 20,000 hectares, i.e., 25 percent of the present stock. When it was realized in the mid-1970s that the industrial forest capacity vastly exceeded the forest industries' needs, the program to expand plantations was replaced by assistance to TWICO to establish mobile sawmills, and thus expand the industrial demand for logs. Support for the maintenance of plantations was continued.

From about 1980, village afforestation became an additional important component in Sweden's aid. The aim is to increase the supply of fuelwood in rural areas. Apart from technical assistance to the Forest Division, SIDA has financed the establishment of nurseries, the production and import of plastic tubes for seedlings, and campaigns to persuade the rural population to plant trees. In the 1980s, SIDA has regarded village afforestation as the most important component in its support to the forest sector.[62]

In assessing the very dominant Swedish contributions to Tanzania's forest development, one may constructively look at each of the major components of aid in turn.

The first component, the expansion of Tanzania's forest plantations, was clearly misconceived. In the absence of a proper demand analysis, it was realized only after a number of years' work that plantation trees do not live much beyond 30 years and have to be harvested at that age. The need to cut, in turn, revealed the very limited industrial demand for wood in the country.

The second component tried to rectify the growing imbalance between the supply of and the demand for logs. SIDA has financed the establishment of 11 small mobile sawmills, adding appreciably to the national sawmill capacity and to the demand for logs. Prevailing prices for sawn wood products provide for a good profitability potential in sawmilling. The mobility, small capacity, simple technology, and labor intensity of the sawmills makes them appropriate for the conditions in Tanzania's plantations.

The third component, the technical assistance extended to the Forest Division and TWICO, has not been very successful. The impact of the expatriates in the ministry is not clearly discernible. TWICO was a perennial loss-maker despite its near-monopoly position, the excess demand for its products, and the many reorganization plans proposed by the foreign advisers. Beginning in 1983, TWICO is becoming increasingly profitable. The turnaround was not related to the technical assistance received. Instead, it was the result of the toughness of the new management appointed in 1981 by Tanzania's president, with a mandate to slash unprofitable units and redundant labor, and to reward or penalize managerial performance.

Finally, village afforestation attends to an extremely important, and clearly poverty-oriented task in national development. Although it is too early to evaluate impact, the head-on rush into this activity by the Tanzanian authorities and their Swedish supporters in about 1980, after village afforestation became politically fashionable, is worrying. More effort spent on designing these endeavors would have been advisable. Current doubts include biological uncertainties about the suitability of the species being propagated. If the trees don't thrive, there may be a backlash. Some aspects of the program's logistics function deficiently. For instance, seedlings are supplied from large nurseries, rather than from local village units. Timely deliveries, crucial to successful planting, cannot be assured because of unreliable transport. Political campaigns supported by Sweden have been used to persuade (or mildly coerce) the farmers to take part in communal afforestation. A major share of the seedlings is planted on collective plots, on which the survival rates are assessed at 0-40 percent in contrast to 50-80 percent on individual plots.[63] In many cases the farmers exposed to political coercion have enrolled unwillingly in the collective programs, but their subsequent participation has not been sufficient to make the programs successful.[64]

An Assessment of the Development Impact of Sweden's Aid

Measuring Aid Achievements

Against the background of the aid objectives and their application set out earlier, the development impact of Swedish aid will be considered primarily in terms of actual and potential additional income generated by the aid activity—with a very heavy weight attached to the portion of that income accruing to the poor. Actual additional income can in principle be derived by evaluating the current service flow (e.g., the water provided, or the forest grown) from the aid endeavors. To estimate potential additional income, one must study the *role of aid in capital formation*, including learning and in the establishment of institutions and the encouragement of policies that permit the efficient utilization of that capital. One must also consider the *sustainability* of the capital and institutions. Finally, one must identify the *beneficiaries* of this additional income, and assign a higher value to that part of the income increment that accrues to the poor. These are not easy tasks, and the following analysis adopts, in the main, a qualitative approach.

Allocation of Aid to Specific Purposes

An earlier section of this study tried to clarify how the allocation of Swedish aid had been determined; here the *appropriateness* of this allocation is explored.

The project surveys brought out one indubitable instance of inappropriate allocation: the effort to expand forest plantations while the capacity of the forest industries was inadequate to absorb the plantations' output. For the other projects, equally definite verdicts cannot be formulated.

In principle, an optimal allocation of aid resources requires a firm macroeconomic framework within which the development impact of alternative activities can be assessed. The absence of such a framework in Swedish aid planning suggests that allocation was suboptimal. In practice, however, even a firm grasp of the macroeconomic circumstances is no guarantee for optimal allocation.

Two striking allocational features stand out when the Swedish aid flows to Kenya and Tanzania are scrutinized. The first is the *very heavy emphasis on subsidized public services*. Such services can have important roles in enhancing agricultural productivity and improving the well-being of the poor. Expectations of this nature motivated SIDA's involvement in rural water and rural health. In retrospect, these expectations were disappointed. Problems in execution along with inappropriate project designs—together with the economic crises that struck the two recipients in the 1980s—constrained the benefits generated by these projects. It is possible that more penetrating *ex ante* macro level analyses would have revealed that the proposed project technologies were too advanced and the recurrent costs too high for the prevailing circumstances.

The second allocational feature is the preponderance of "standard," as distinct from "innovative" activities. Innovative aid is here defined as ventures aiming to establish and use new technical, administrative, institutional, or other relevant knowledge, in a manner especially adapted to the recipient environment. Such aid can often function as a catalyst in mobilizing dormant or underutilized resources into highly productive efforts. With a few exceptions, notably the TFNC, the innovative content of Sweden's aid is small. Most of the money has been spent on straightforward construction, and technical assistance in the main has involved the transfer of standard professional competences and administrative know-how by experts working on short-run contracts.

Problems in Execution

The delays and cost overruns in the execution of the construction programs financed by Sweden's aid, as well as the deficient quality of the facilities delivered, have caused disappointments. Many other aid programs in Africa have experienced similar difficulties. Exaggerated Swedish ambitions due to limited experience with the recipient environment led to an unrealistically high pace in the execution plans.

Another reason for the delays and deficient implementation standards has been blurred responsibility for aid execution. In the early days, Sweden's role was seen to provide "turnkey" projects—that is, complete facilities in operating order. Later, the responsibility for execution was shifted to the recipients on the grounds that they would benefit from learning by doing. Yet Swedish unwillingness to relinquish responsibility for execution in effect resulted in dual control. Although formal responsibility for implementation is usually vested in the recipient ministry, Swedish experts attached to that ministry, as well as SIDA itself, commonly hold important executing functions.

A return to the practice of turnkey project delivery is considered inappropriate. The transfer of all responsibility to the recipient is opposed by SIDA, however, as it is believed that such a move would lead to a drastic deterioration in performance standards.

The reluctance to assign clear responsibilities for execution can be challenged. Where sophisticated technology is transferred, the economic gain from turnkey delivery in terms of speed and efficiency in execution could more than outweigh the benefit of recipient learning through involvement in execution. In technically less complex endeavors, the arguments against vesting all execution responsibility with the recipient are not convincing. If direct donor involvement in execution in fact did make a great difference, clearly inferior performance would be apparent in those parts of the economy of Kenya and Tanzania that did not receive aid, e.g., such as postal services and road transport. In fact, no such difference is noticeable. Furthermore, over the period between 1970 and 1982, aid has financed, on average, only 21 percent of the investment expenditures in Kenya and 46 percent in Tanzania.[65] If the donor claim were true, then the majority of investments in both countries should have yielded very little return in terms of growth and development. In fact, the incremental capital output ratio, ICOR (gross investment ratio over GNP growth rate) works out at an average of 4.5 in Kenya and 5.4 in Tanzania over the 12-year period. These figures are in no way exceptional. The ICOR for the entire developing world is 5.0, while for industrialized countries it is as high as 8.0—indicating a lower return to investment in heavily capitalized economies.

On this evidence, it is hard to maintain the claim about general inefficiency of recipient institutions in implementing or operating projects. Like executing donor agencies, however, these institutions have to grapple with an environment that is deficient with regard to infrastructural facilities, and in which the signals provided by economic policy are often perverse.

Achievements and Costs of Aid

Swedish aid has indeed contributed to physical capital formation. The installations to supply water in rural areas, the facilities to store agricultural products, and the structures that prevent soil erosion or that house rural health centers and educational institutions provide ample evidence. Similarly, the training programs for medical staff, water engineers, forest technicians, and other professionals have resulted in substantial human capital formation, even though this is less easily observable.

The contribution of Sweden's aid to the establishment of institutions and policies that facilitate the utilization of this capital, is less clear. The TFNC, and the Soil Conservation Unit in the Kenyan Ministry of Agriculture are admirable examples of useful institution building in which Swedish aid has had a crucial part. In contrast, the impact of the heavy Swedish manpower inputs in the ministries of water and health in both countries has been weak. In the 1980s, concern about some of these technical assistance programs has been voiced by the hosts, and several of the programs are being scaled down.

In a longer-term perspective, there is probably a relationship between the conceptual soundness of an aid project and the impact of the technical assistance provided in its support. Another prerequisite of success is the commitment of the recipient government to the task at hand. Both factors help explain the differential performance of Swedish technical assistance to the land care soil conservation program in Kenya on the one hand, and to rural health and rural water in both countries, on the other.

Throughout the period here surveyed, Sweden has adopted a very noninterventionist stand with regard to recipient country policies. A rare example of direct Swedish attempts to interfere has been the quarrel with the Kenyan government about rural water tariffs. At a very high level of generality, Swedish policy influence has been noted behind the decisions in both countries to launch large-scale rural water programs.

SIDA has not made any overt efforts to bring about policy change in areas like exchange rates, or agricultural pricing and marketing, where serious policy-induced distortions have been common. Only in the early to mid-1980s in consequence of the economic crisis that afflicted both East African nations, has the Swedish aid agency started to question crucial policies of this kind, especially in Tanzania.

The reluctance to impose policy conditionality has had both practical and ideological grounds. At the *practical* level, imposition of different conditions by many donors was felt to be improper because the recipient governments could hardly satisfy them all. At the *ideological* level, broad policy conditionality was regarded as an undesirable infringement on the recipient's sovereignty. SIDA, along with other Nordic aid agencies, was hesitant to "gang up" behind the "hardliner" donors because of a fear that it might become hostage to policy recommendations contrary to its equity concerns. When policy reform in Tanzania emerged as a crucial precondition for the continued functioning of SIDA's assistance, the Swedes chose to present their views not in the form of strict conditions, but rather in a seminar form.[60] As the Tanzanian crisis deepened toward the mid-1980s, the Swedish aid policymakers shifted their views and started to accommodate their policies with those of the "hardliners."

The flow of goods and services from the capital created by Swedish aid has not been impressively large. In the major programs surveyed, the physical capital stock is under decay, and the capacity utilization is quite low. SIDA's reaction to deficiencies like these has been late and slow.

There must be a link between the output of goods and services, and income generation. If the former is unimpressive in relation to production capacity, the same must be true of the latter. The Swedish aid endeavors under study were designed with a distinct focus on low income groups. One would therefore expect that a major share of the additional income flow that the aid generated accrued to the poor, improving equity. In some cases, serious deviations from these intentions are evident. The most clear-cut example is the Kenyan rural water supply program, whose benefits have been reaped in the main by the well-off.

A full-fledged evaluation must relate the achievements of aid to the resource costs involved. Yet the difficulty of quantifying costs is as great as that of determining benefits. In most ventures, donor and recipient funds have been mixed, and the records seldom permit one to disentangle the value of the resources that the recipient has expended on each aid activity. Ideally, one would want to make a comparison between achievements and costs in some type of cost-benefit analysis. For the projects under scrutiny, such efforts would have to start from scratch and would require a very substantial original work effort in data collection.

The sums that *are* quantifiable are those disbursed by Sweden—summarized in Tables 5 and 6. To these should be added substantial but unknown sums paid by the recipients, and the interest on the money expended until start-up of production. This resource spending led to the aid achievements described in the preceding section. Additional—but even harder to quantify—benefits may have accrued in the form of learning by donor and recipient in the process of aid implementation.

Have the aid resources been productively spent or not? The answer is that we do not know. Given the slowness of construction and the low utilization of capacity of the four major programs surveyed, it is clear that the cost-benefit ratio was substantially below the level (whether assessed or not) that formed the basis of the original decisions to go ahead. But then, as noted, the underlying assessments may have been unrealistically optimistic.

Distortions Caused by Aid on Society at Large

Overgrown government. Virtually all Swedish aid has been channeled through the central governments of Kenya and Tanzania. This practice is not exclusive to Sweden; other donors have followed a similar procedure. SIDA's insistence that *recipients* should launch particular activities, coupled with the promise of aid, contributed to an overexpansion of their government administrations. The availability of aid and the hope that it would continue after the aid facilities had been delivered, led to a carefree recipient attitude both to investment expenditure and recurrent cost implications. For example, if, in the absence of aid, the governments of Kenya and Tanzania had at all gotten involved in rural water supply, the programs would certainly have been more modest, with a greater financial burden carried by the consumer—simply because the governments could not have afforded anything else. As a result, the central government would have been smaller, and less prone to administrative and financial overextension.

To claim, as donors do, that the excessive cost of installations is due to recipient insistence, is to miss the point. If it is footing the bill, the donor agency is obviously

asked to provide the best—especially when it is uncertain that any "savings" from choosing lower standards will be available for other purposes.

Operations and maintenance costs. This issue concerns the recipient governments' inability or unwillingness to provide adequate funds for the recurrent costs of aid projects or the ensuing capital decay.

Recipient government inability to cover such costs has arisen from the principle—characteristic of Swedish aid as well as that of other donors—that aid is intended for widely interpreted investment purposes only. The great importance of aid to Kenya and Tanzania has resulted in a heavy investment bias in the two governments' budgets. The growth of the aid financed capital stock, and of the recurrent costs needed to keep it operational, has been much faster than the governments' recurrent revenue expansion. In this way, the investment bias of aid has contributed to the deficiency of recurrent cost funds.

Unwillingness on the part of the recipient government to provide recurrent cost finance could have two motivations. First, the recipient may never have wanted the aid venture at all, or may feel that, though the venture is useful per se, it is nonviable—because of, for instance, the technology chosen. Second, the recipient may calculate that the donor will provide the recurrent funds after all, rather than see the aid project decay.

Swedish aid projects provide interesting examples of such recipient inability or unwillingness. The recurrent costs of the rural water and rural health programs were probably beyond the means of the recipient governments. In Kenya, the deficient recurrent cost funding of family planning reflected the government's lack of interest in this activity. In Tanzania, some of the rural water installations are nonviable because their operating costs are higher than the investment plus operating costs of alternative installations. Kenya's reluctance to provide funds for operating the rural health centers was clearly related to the Swedish (and Danish) indications of possible support.

The operations and maintenance issue raises two questions for the donor. The first and more immediate of these is what to do about past aid investments under decay. The second, more long-term question is whether to retain the principle of "aid for investments only."

If the sole objective of aid is the maximization of recipient development, then the principle should go. Funding of recurrent costs should be provided wherever it results in greater production and income flows than expenditure on new capital formation. This policy may, however, be difficult to adopt on political grounds: if other donors continued to apply the "aid for investments only" principle, Sweden's aid would contribute best to development by being spent entirely for operating the aid projects of other donors. Although Sweden has been more liberal and flexible than most donors on the issue of recurrent costs, such an extreme policy clearly would be unacceptable to the domestic aid constituency.

Even in less extreme cases where only the Swedish-financed projects are concerned, one must consider the possible negative consequences to development from long-run donor commitments to pay for operations. Such commitments could lessen the recipient's sense of responsibility for these projects, and lead to a perpetuation of activities with low priority on the recipient's agenda.

At a broad level, there has been a fundamental adjustment in Swedish assistance flows over time in response to the recipients' inability to operate the investments provided by aid. Early on, the Swedish programs did indeed consist mainly of investments in areas like power, roads, buildings, water, or industrial equipment. Later, the emphasis shifted toward the necessary software to run these installations, e.g., training curriculae, health plans, operating systems, and instruction. The more recent acceptance of greater responsibility for management and operations costs is but a last step in this adjustment process.

The appropriations in aid technique. Swedish aid funds normally have been channeled through the Ministry of Finance to the specialized ministry and then on to the organization in charge of project implementation. Since about 1980, this procedure has been changing. SIDA claims that its projects experience problems in obtaining the funds transferred from Sweden. Delays in forwarding the funds or allocating the foreign exchange to the project administration have severely disrupted project work. The foreign exchange crisis plaguing the two countries, and the ensuing pressures to reallocate resources for crisis resolution, explain the disrupted flow of funds through the recipient administrations.

To assure the smooth running of its projects, SIDA has introduced the practice of appropriations in aid. This means that funds as well as imported equipment are provided from Sweden directly to the project organization, and that both the Ministry of Finance and the specialized ministry are bypassed in the process.

The practice has become quite common among donors to Kenya and Tanzania during the 1980s. No doubt it contributes to speeding up aid implementation. But at the same time, appropriations in aid raise fundamental issues that have not been much discussed by the donor community. While it has been introduced as a measure of donor expediency, the practice is turning around the whole philosophy of aid giving. International aid traditionally has been seen as a government-to-government relationship. Where a large part of the recipient governments' budgets are aid-financed, the spread of appropriations in aid is seriously compromising the authority of the central government. Though formally aid remains the government's responsibility, in reality the appropriations in aid along with the increasing regionalization of the donors' interests, turn foreign assistance into an activity more akin to private foreign investments—or missionary activities—with limited government say over contents or mode of operation.

Another consequence of appropriations in aid is that it gives precedence to micro-level considerations in resource allocation. During the extended crisis plaguing Kenya and Tanzania, the optimal use of scarce foreign exchange resources has been in overcoming crucial constraints on the functioning of the economy, for example, by importing diesel or spares to keep road transport operational—rather than in maintaining a timely implementation of Swedish health or rural water investments. Appropriations in aid give priority to the latter. The following SIDA view is probably representative of the donor community: "Appropriations in aid has become a must now that the Kenyan government, impelled by the IMF, has had to make heavy cuts in its development budget."[67] The implication is quite clear: aid project implementation has precedence over national development.

Are these consequences good or bad for national devel-

opment? Though the answer is not self-evident, the negative consequences are likely to predominate. The efficiency of resource allocation at the national level is bound to decline. The economic sovereignty of the recipient government is circumscribed. Institutional development in the recipient administration will stagnate. On the positive side, there may be an advantage in reducing the reach of overgrown government. What is clear is that this change in aid practice has ramifications far beyond the issue of donor expediency.

Gains in donor experience. The aid relationship with Kenya and Tanzania has resulted in the accumulation of valuable experience within SIDA. The consequent potential to improve future aid effectiveness provides some compensation for the failures and inadequacies of many past programs. Some of the lessons are briefly indicated below.

1. At the broadest level, Sweden's experiences with the economic crises confronted by Kenya and Tanzania in the 1980s has clarified that a large donor cannot be passive vis-a-vis the national economic policy environment. An aid-financed activity cannot function well in an environment characterized by severe policy-induced scarcities and distortions. Import dependent projects will fail if there is no foreign exchange to satisfy their needs. Projects that aim at improving agricultural productivity and output will not succeed if agricultural pricing discourages farmers from producing more. When national economic policies are clearly counterproductive to aid, the donor's choice will be either to influence the recipient to change such policies, or to discontinue the aid endeavor.

2. Convincing donor influence in broad policy matters requires a comprehensive grasp of the macroeconomic circumstances of the recipient nation. Such a grasp is also a precondition for efficiency in the allocation of aid.

Though gains in this area certainly have been made over the past two decades of aid activity, Sweden has yet to secure the requisite level of understanding of the recipients' social and economic environment. Past experience points to the dangers of rushing into this environment with a new activity on a large scale; it is better to proceed step by step, taking the experiences gained in the process into account as the activity is developed. Experience with water and health assistance in both countries also points to the inadvisability of using generous aid offers to induce the recipient government into undertakings that it can ill afford and the consequences of which have not been fully considered. The broad involvement of users in financing, execution, and maintenance is indispensable if social service activities like rural water or rural health are to succeed. It is essential that the technology for operating such service programs be simple and cheap enough to be manageable by the local communities. The best approach to assure such popular participation still remains to be defined.

3. The problem of inadequate recurrent cost financing already has been discussed at length. It points to the importance of clarifying in detail the recurrent cost implications before new aid ventures are launched.

4. Considerable commonality of interests must prevail between donor and recipient if the donor's objectives are to be reasonably satisfied in aid activities that are completely integrated in broader national programs. Thus Swedish aid to family planning in Kenya was ineffective because the recipient authorities did not share the Swedish interest in this endeavor; and Swedish support for rural water in Kenya did not reach the poor because the recipient authorities did not share the Swedish concern about equity.

5. A lesson from Sweden's aid in Kenya and Tanzania is that the general poverty orientation of broad public service programs is no guarantee of improved equity. Direct measures to reach the poor are usually required to avoid a major part of the benefits finding its way to the better-off groups.

6. Careful analysis to clarify actual demand for the output from aid ventures is essential to avoid failures like Sweden's expansion of Tanzania's forest plantations.

7. Expectations about the speed of aid implementation and about the ratio between outputs and resource inputs have been excessively optimistic. More realistic assessments of what is achievable will reduce future disappointments. This is true irrespective of whether underachievement has been due to inadequate competences within the aid agency, to the difficult social and economic environment in recipient countries, or to other factors.

8. SIDA's scattered experience with channeling aid through nongovernmental organizations is, on the whole, encouraging. These organizations have proved less bureaucratic and more flexible than the government as instruments for putting aid to useful work.

Policy Conclusions for Future Aid

This section takes a look forward on the basis of Sweden's past experience with aid to Kenya and Tanzania. Beginning on a shorter-run note, by first discussing the necessary adjustments in Swedish aid to help the two countries overcome their present economic crises, this section then attempts to formulate a series of longer-run policy conclusions delineating changes and new thrusts needed to make aid more effective.

Aid for crisis resolution. The economic crisis affecting Kenya and Tanzania since the early 1980s constitutes a serious deterrent to development. Since the objective of aid is to promote development, it is appropriate to seek opportunities to employ aid for crisis resolution. The use of aid resources to fight the crisis is also important for the effectiveness of the normal aid programs, because the latter are hard to implement while the crisis lasts.

The causes of the crisis are external as well as internal. Unfavorable climatic conditions and depressed demand for the commodities exported by Kenya and Tanzania, along with distorting economic policies, have resulted in a number of bottlenecks that paralyze the functioning of their economies. Prominent among the bottlenecks is the lack of foreign exchange.

Foreign aid could play a constructive role both in relaxing the resource bottlenecks and leveraging change in some of the internal policies that contributed to the crisis. This implies that most of the ongoing aid not immediately related to crisis resolution should be deferred, and that the released resources should be spent on an expanded program of import support without specific purpose ties, but contingent upon policy reform. The primary purpose of the policy change prodded by the donor would be to remove existing bottlenecks, e.g., to reduce the foreign exchange scarcity by increasing its price, or to augment the domestic availability of food by permitting agricultural prices to rise.

Swedish aid has in fact been redirected along such lines in the recent past. More aid is being provided for import support. Increasing pressures are being exerted by SIDA to induce policy change, but the shifts have been only partial and appear inadequate. The cautious approach may be due to uncertainty about the way to tackle the new situation, as well as to a reluctance to slow down or arrest ongoing aid ventures.

The impact of aid in crisis resolution, in terms of relaxation of resource constraints and even more as a leverage for policy reform, will be greatly increased if the major donors can coordinate their policies. A first crucial task for a coordinated donor group would be to sit down with the recipient and hammer out a feasible path out of the crisis, and the most constructive role that foreign assistance could play in the process. As a leading donor in Tanzania and a prominent one in Kenya, SIDA could well take a lead in coordinating donors and redirecting aid in the suggested directions.

Longer-run issues in Swedish aid. The acute economic crisis from which Kenya and Tanzania are presently suffering will eventually be resolved. In the meantime, it is important to consider the policy measures that could improve the effectiveness of Sweden's aid in the longer run. A number of such measures that emerged from the analyses in earlier sections of this chapter are restated in the following paragraphs.

Swedish understanding of the macroeconomic circumstances in the recipient countries should be strengthened. One approach might be to support the establishment of independent economic policy think tanks of high academic standing in each recipient country, and to encourage collaboration between these and Swedish institutions. Apart from strengthening Swedish knowledge about Kenya and Tanzania, these independent institutes could fulfill useful roles in formulating policy views alternative to those of the government.

Careful macroeconomic analysis is indispensable if one wants to determine the appropriateness of Swedish aid allocations. Such analysis would reveal the extent of the investment bias in government budgets caused by aid. It would also throw valuable light on the recurrent cost implications of aid projects, and indicate where aid expended on recurrent costs is appropriate. In this way, it could help SIDA in formulating long-run policies for recurrent cost financing. To avoid heavy commitments, and yet to encourage the recipient to provide sufficient resources for operations, SIDA might consider the approach—sometimes adopted by the United Kingdom—of assuming only the incremental recurrent costs on condition that the recipient provide for the base load.

The developmental implications of all proposed aid activities should be carefully screened against the macroeconomic circumstances of the recipient countries, to weed out ventures that do not fit. This would reduce the need for SIDA to be involved in detailed decisions about aid allocations. Macroeconomic analysis ought to reveal neglected comparative advantage that aid could help to mobilize for additional income generation. There is a likelihood that the guidelines provided by such analysis would reorient the content of Sweden's aid in favor of agriculture, or of activities with an export potential.

All this is not to say that a better understanding of the macroeconomics and of the social and economic environment of recipient countries—while of very great importance as a framework for the delineation of an appropriate aid program—is by itself a panacea. A variety of other preconditions must also be satisfied to achieve a high level of aid effectiveness.

The short institutional memory of SIDA needs to be extended. Historical analyses on past aid provided by SIDA, assessing what went right and wrong over time, could serve this purpose. Making such analyses required reading for relevant personnel groups could contribute to more complete "feedback" from past experiences of this agency.

Greater efforts should also be devoted by SIDA to the evaluation of its activities at the micro level. The agency's accounting systems should be adjusted with a view to facilitating cost-benefit analyses of projects and programs.

The circumstances under which Sweden should apply policy conditionality to its aid should be very clearly identified. Widespread coordination among donors is necessary to avoid inconsistencies that the recipient cannot reconcile. Clearer rules on when and where policy conditionality will be applied are important to help the recipient government anticipate the consequences of its own alternative actions, and to minimize the risk of opportunism on the donor side in the use of this instrument.

A greater emphasis on innovative activities to develop new scientific, technical, or institutional knowledge—

appropriately adapted to the recipient country—could well increase the impact of Sweden's aid on output and income generation. The research centers financed by the Rockefeller and Ford Foundations, in which the green revolution was born, come to mind as examples. The Tanzanian village afforestation program to which SIDA is a prominent contributor could provide an opportunity for innovative aid from Sweden. The program would be strengthened by the setting up of a forest research institute with the task of identifying the species most suited for planting around villages, but also of clarifying the sociopolitical circumstances that must prevail to assure plant survival. Sweden may have a comparative advantage in this area, given its long historical tradition in forest research. Launching innovative activities requires more careful research and study of the recipient environments than has been common under Sweden's aid programs. The standard two-year technical assistance contract is unsuitable in the pursuit of innovative aid. To be effective, the core personnel provided by SIDA probably would have to commit their lifetime careers to such tasks.

The causes of the disappointing performance of the rural water and rural health programs launched by SIDA are easy to summarize. They (a) employed technologies not manageable at the local level, (b) involved operating and maintenance costs that the central governments could not afford, and (c) made inadequate provision for local participation.

What kinds of rural water and rural health facilities would be more appropriate—in the sense that they could serve a major part of the population in Kenya and Tanzania, and be operated and maintained without continuous foreign support? This question has not yet been sufficiently investigated. Innovative aid efforts could make a valuable contribution by supporting the development of technologies in these areas, that are simple enough and cheap enough to operate. The practicalities of assuring local participation without using coercion are also worth some aid-supported research efforts.

These may be tricky tasks. It is possible that to satisfy the above conditions, the facilities would have to be so simple and rudimentary that an advanced country donor like Sweden would not be prepared to support their establishment. One of several reasons for a negative reaction might be that the public opinion in the donor country would disapprove of, say, a national health system that could not help sick people because the available resources were all used for disease prevention. Another reason for donor disapproval might be that a system of, for example, rural water, with acceptably low recurrent costs (gravital system) may have much higher total costs than another system (drilled wells run by diesel pumps) with unacceptably high recurrent cost levels. On strictly economic grounds, it might be cheaper for the donor to install the diesel-run system and pay for its operation, rather than to finance the very high design and installation costs of the gravital system and have the consumers cover recurrent costs. Such issues require careful research in which Swedish aid could play a useful role. Indeed, the slow progress of SIDA's more recent rural water endeavors at the regional level may be attributable to attempts to tackle these complex problems.

The weakening of Sweden's traditional, altruistically motivated aid constituency and the strengthening of the proponents for aid that is commercially useful to Sweden, was noted earlier. This trend increases the need to consider very carefully the trade-offs between a larger aid program containing commercial features that may reduce its developmental impact on the one hand, and a smaller and "purer" program on the other. Concentration of Swedish aid on a few activities in which it has a distinct comparative advantage, coupled with innovative efforts to adapt Swedish excellence to the conditions of the recipient countries, might result in a program that is commercially beneficial to Sweden but simultaneously contributes effectively to income generation and improved equity.

The executive responsibility in SIDA's projects should be clarified. In "standard" aid with few high-tech inputs, more responsibility could probably be handed over to recipient institutions, along with clear-cut performance standards, whose fulfillment would be a condition for continued support. Implementation is more complex in innovative aid, warranting a fuller Swedish executive involvement. High-tech ventures might best be delivered as turnkey projects.

The encouraging experience of providing aid through nongovernmental organizations suggests that such collaboration should be expanded. At the same time, very careful consideration has to be given to the role of the government in the aid process, so as to safeguard against compromising the central authorities, as has occurred through the practice of appropriations in aid.

SIDA's efforts to coordinate its aid with Nordic and other donors could usefully be widened. Such coordination is necessary if donors want to pursue purposeful policy conditionality. Other potential advantages of coordination include the reduction of the recipient government's administrative hurdles, avoidance of duplication, a sharing and hence faster spread of valuable experiences, and improved efficiency in the allocation of the overall aid flows to recipient countries.

Notes

1. Throughout the study, "aid" or "assistance" is defined as in the reports of the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development. Between 1970 and 1981, the annual average Swedish Kroner (SEK)/US$ exchange rate varied between 4.15 and 5.17. It rose thereafter, to reach a peak of 8.99 in 1984. Constant SEK values have been obtained by using the Swedish consumer price index as deflator. Split years refer to the Swedish budget year, starting July 1.

In addition to the works quoted, the analysis is supported by intensive interviewing in Sweden as well as in Kenya and Tanzania.

2. M. Radetzki, *Aid and Development*, Praeger, New York, 1973.

3. Appendix Tables 1 and 2 provide further details.

4. *Sveriges samarbete med u-länderna* (Swedish collaboration with developing countries) SOU (Stockholm) 1977:13; SIDA, *Bistånd i siffror och diagram*, November 1984.

5. *Sveriges Samarbete Med u-l anderna*, SOU 1977:13.

6. O. Stokke, *Sveriges Utvecklingsbistand och bistandspolitik* (Sweden's development aid and aid policy) (Nordiska Afrikainstitutet, 1978), concludes that this goal has been insignificant—except at the rhetorical level. SIDA's longstanding support for refugees of political struggles and conflicts can be seen as a tangible manifestation of the democratization goal, however. In recent years, attention increasingly has turned to integrating the democratization objective into the regular development aid portfolio—for instance, through literacy programs and support to decentralized local government structures.

7. Ibid.

8. SIDA, "SIDA's Strategi for Landsbygdsutveckling," (SIDA's strategy for rural development) 1981; SIDA, "Policy for SIDA's Halsobistand," (Policy for SIDA's health sector support) 1982; J. Stymne, "Importstod—Principer och Problem" (Import support: Principles and Problems) (SIDA, 1984), and, SIDA, "Vattenstrategi, Landsbygdens Vattenforsorjning" (Water Strategy Rural Water Supply) 1984.

9. Ruth Jacoby, "Idealism versus Economics: Swedish Aid and Commercial Interest," in P. Fruhling, editor, *Swedish Development Aid in Perspective*, Almquist & Wiksell, Stockholm, 1986.

10. Regeringens proposition (Swedish Government Budget Proposal) 1977/78:135, p. 11.

11. SIDA's anslagsframstallning 1977/78, SIDA 1976.

12. Swedish National Audit Bureau, SIDA *in Tanzania*, 1974, p. 23, 128; and Swedish Ministry of External Affairs, *Effektivare Bistandsadministration*, (More Efficient Aid Administration) DS UD 1984: 1, p. 201.

13. Swedish Ministry of External Affairs, *Effektivare Bistandsadministration*, DS UD, 1984:1, p. 207.

14. Examples of more comprehensive evaluations include recent studies of the Kenyan and Tanzanian health sectors and of the Tanzanian forestry sector.

15. The conclusions drawn here about limited feedback of evaluation are called into question in a doctoral dissertation by Kim Forss, "Planning and Evaluation in Aid Organization," Stockholm School of Economics, 1986. Forss argues that the more informal, learning-by-doing evaluations used in SIDA have been valuable inputs into SIDA's operations, and that they have usefully augmented SIDA's institutional memory and knowledge.

16. SIDA's views on Kenya were most likely inspired by the influential ILO report, *Employment, Incomes and Equality*, Geneva, 1972. The findings with regard to income distribution have been heavily criticized since by various studies, e.g., P. Collier and D. Lal, "Why Poor People Get Rich: Kenya 1960-79" *World Development*, No. 10, 1984. Donor perceptions of Tanzania's favorable record on income distribution were widespread, as reflected for instance in various World Bank reports from the 1970s.

17. Ulf Rundin, *Tio Ars Bistånd till Kenya* (Ten Years of Aid to Kenya) (SIDA, 1978).

18. SIDA, Samarbetsprogram med Kenya (Collaboration Program with Kenya) 1979/80-1980/81, 1978.

19. SIDA, Samarbetsprogram med Kenya 1981/82-1982/83, 1981.

20. SIDA, Samarbetsprogram med Kenya 1977/78-1978/79, 1977.

21. SIDA, Samarbetsprogram med Kenya 1983/84-1984/85, 1983.

22. SIDA, Samarbetsprogram med Kenya 1975/76, 1975; SIDA, Samarbetsprogram med Kenya 1983/84-1984/85, 1983.

23. "Evaluation of the Rural Water Supply Program," 1977 (A report for SIDA referred to as the VIAK Report).

24. SIDA, *Summary of Recent Recommendations on the Rural Water Sector*, Nairobi, May, 1985.

25. SIDA, Samarbetsprogram med Kenya 1979/80-1980/81, 1978.

26. SIDA, Samarbetsprogram med Kenya 1985/86-1986/87, 1985.

27. SIDA, *Summary of Recent Recommendations on the Rural Water Sector*, Nairobi, May 1985.

28. SIDA, Samarbetsprogram med Tanzania (Collaboration Program with Tanzania) 1983/84-1984/85, 1983; WHO/World Bank Cooperative Program, *Rural Water Supply Sector Study*, 1977, Annex 7, p. 80-81.

29. O. Rimer, "Tanzania Rural Water Supply Development," Report prepared for the Tanzanian Ministry of Agriculture, April 1970.

30. O. Therlikdsen, *Planning and Implementation of Basic Needs Activities: The Case of Donor Funded Rural Water Supplies in Tanzania*, Draft, Copenhagen, June 1985.

31. SIDA, Samarbetsprogram med Tanzania 1985/86-1986/87, 1985.

32. Tanzania National Committee on Drinking Water Supply: Minutes of Meeting 25 April 1985 in Dar es Salaam.

33. SIDA, Samarbetsprogram med Tanzania 1983/84-1984/85, 1983.

34. Interview with Roger Anderson, UNICEF, Dar es Salaam, September 1985.

35. O. Therkildsen, op. cit.

36. O. Therkildsen, op. cit.

37. SIDA, Samarbetsprogram med Tanzania 1981/82-1983/84, 1981.

38. Bureau of Resource Assessment and Center for Development Research, *Water Master Plans for Iringa, Ruvuma and Mbeya Regions*, 1983, Vol. 12, pp. 6.19-6.20.

39. SIDA, Samarbetsprogram med Kenya 1981/82-1982/83, 1981.

40. SIDA, Samarbetsprogram med Kenya 1985/86-1986/87, 1985.

41. SIDA, Samarbetsprogram med Kenya 1983/84-1984/85, 1983.

42. SIDA, Samarbetsprogram med Kenya 1985/86-1986/87, 1985.

43. Ibid.

44. SIDA, *Evaluation of Swedish Assistance to Health Sector Development in Kenya* 1969-1985, 1986/3, Part I.

45. Ministry of Health, *Development Plan* 1984-88, Nairobi, August 1983.

46. SIDA, Samarbetsprogram med Kenya 1976/77, 1976.

47. SIDA, Samarbetsprogram med Tanzania 1975/76, 1975.

48. SIDA, Joint Swedish-Tanzanian Health Sector Review, February 1984.

49. SIDA, Samarbetsprogram med Tanzania 1981/82-1982/83, 1981.

50. Report from a joint Swedish-Tanzanian Health Sector Review, February 1984.

51. SIDA, Samarbetsprogram med Tanzania 1985/86-1986/87, 1985.

52. Ministry of Health, "Country Report on Tanzania," Dar es Salaam, 1982.

53. SIDA, Samarbetsprogram med Tanzania 1985/86-1986/87, 1985.

54. SIDA, Samarbetsprogram med Kenya 1981/82-1982/83, 1981.

55. Soil Conservation Project Semiannual Report July-December 1984, Ministry of Agriculture, Nairobi.

56. L. Hedfors, "Evaluation and Economic Appraisal of Soil Conservation in a Pilot Area," Ministry of Agriculture, Nairobi, 1981; and "Evaluation and Economical Appraisal of Soil Conservation in Kalia Sub-Location, Kitui District," Ministry of Agriculture, Nairobi, Draft 1985.

57. SIDA, Samarbetsprogram med Tanzania 1981/82-1983/84, 1981.

58. Joint Tanzanian-Swedish Review Mission in the Forest Sector, Dar es Salaam, 1980.

59. Ibid.

60. Ibid.

61. The sources to the following three paragraphs include SIDA, Samarbetsprogram med Tanzania, several issues, interviews with E.M. Mnzawa, Director and Arnold Ahlbeck, expert, Forestry Division, Dar es Salaam; and with Roland Oqvist, SIDA's office in Dar es Salaam. The interviews were carried out in September 1985.

62. SIDA, Samarbetsprogram med Tanzania 1981/82 1983/84, 1981.

63. SIDA, Samarbetsprogram med Tanzania 1985/86-1986/87, 1985.

64. M. McCall Skutsch, *Why People Don't Plant Trees: The Socioeconomic Impacts of Existing Woodfuel Programs: Village Case Studies, Tanzania*, Discussion paper D-73P, Resources for the Future, March 1983.

65. The sources for the figures in this paragraph include OECD, *Development Assistance Committee Annual Review*, several issues; United Nations, *Yearbook of National Accounts Statistics*, several issues; the *World Bank Atlas*, several issues; World Bank, *World Development Report* 1984, and *World Bank Annual Report* 1983.

66. G. Edgren, "The Changing Aid Relationship: Terms, Conditions and Working Methods," in P. Fruhling, ed. *Swedish Development Aid in Perspective*, Almquist & Wiksell, Stockholm, 1986.

67. SIDA, Samarbetsprogram med Kenya 1985/86-1986/87, 1985.

Appendix Table 1
Swedish aid to Kenya: Sectoral distribution (SEK millions)

	Until and including 70/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87	Total until 1 July 1987
Agriculture, of which:	21.2	3.2	9.8	12.4	13.2	15.4	7.8	12.0	16.8	11.9	12.8	8.3	10.5	17.4	32.2	23.8	34.0	262.8
Artificial insemination	12.9	2.3	2.4	2.6	3.4	1.0	0.1	0.1						24.8				24.8
Agricultural finance						8.0		1.5	6.5	2.0			4.0	25.7	8.5	7.0	15.6	56.9
Land care								3.4	3.1	3.5		8.3	6.5	46.0	17.3	13.9	13.1	90.3
Sector support											76.2	6.4	2.9	5.2	14.6			
Other	8.3	0.9	7.4	9.8	9.8	6.4	7.7	7.0	7.2	6.4								76.2
Rural development excluding agriculture, of which:	12.8	5.9	4.4	33.1	15.2	28.2	36.5	30.3	41.1	45.5	30.3	38.9	49.3	40.2	72.3	69.7	62.3	616.0
Rural water	1.1	3.7	1.5	27.6	9.2	20.5	17.8	17.8	37.4	25.9	14.7	10.9	18.2	223.5	17.7	21.4	26.8	289.4
Rural cooperatives	11.7	2.2	2.9	2.8	2.4	2.8	4.4	1.4	1.8	3.6	5.3	7.0	5.3	57.6	2.5	3.8	0.0	63.8
Rural infrastructure				2.7	3.6	0.6	0.4	0.7	0.7					8.7				8.7
Rural health[a]						4.3	13.9	10.4	1.2	16.0	10.3	21.0	25.8	121.9	52.1	44.5	35.5	254.1
Industry				0.6	5.7	1.5	1.6	1.1	0.9	7.8	0.9	1.1	2.9	1.0	0.2			25.3
Transport			2.8	4.8	8.8	5.0	6.0	2.6	0.3									30.3
Energy		4.8	9.7	9.3	3.1	4.6								4.9	25.1			61.5
Health and family planning	1.4	0.9	1.9	2.3	1.1	4.7	6.5	9.1										27.8
Education	32.7	6.8	5.2	8.7	18.0	21.2	20.8	15.4	7.2	13.9	22.1	7.3	13.9	7.2	5.7			206.1
Planning and administration	2.3	2.5	2.0	3.0	3.7	3.4	3.4	5.4	1.2	0.4								27.3
Commerce and finance		0.2	0.2	0.3	11.0	0.6	1.5	2.0	2.4	2.9								21.1
Import support, of which:									5.5	13.9	13.1	26.0	17.9	25.8	12.4	18.6	12.0	145.2
Tied to purchases in Sweden									5.5	10.0	9.2	19.9	9.9	74.5	12.4	18.6	12.0	117.5
Miscellaneous										2.1	3.7			1.4	4.2	8.0	6.2	25.5
Subtotal	70.4	24.3	36.0	74.5	79.8	84.6	84.1	77.9	75.4	98.4	82.9	81.6	94.5	97.8	152.2	120.1	114.5	1449.0
Aid through nongovernmental organizations				0.1	1.7	1.5	1.5	1.4	1.4	2.5	4.3	5.6	4.9	7.8	14.1	16.7	13.3	76.8
Emergency Aid															3.6			3.6
Food Aid										0.4	3.0							3.4
Total	70.4	24.3	36.0	74.6	81.5	86.1	85.6	79.3	76.8	101.3	90.2	87.2	99.4	105.6	169.8	136.9	127.8	1532.8

[a] From 1979/80, including Family Planning
Source: SIDA, *Bistand i siffror och diagram*, annual: SIDA's Accounts Department.

Appendix Table 2
Swedish aid to Tanzania: Sectoral distribution (SEK millions)

	Until and including 70/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87	Total until 1 July 1987
Agriculture, of which:	7.2	6.6	17.8	23.6	20.8	20.9	15.8	18.1	14.0	12.7	7.3	9.6	8.1	7.5	6.1	3.5	2.3	201.9
Agricultural education	4.6	1.9	4.4	5.2	5.5	6.5	0.8	2.0	3.1	2.6	1.1	5.4	5.2	5.2	4.3	0.0	0.0	57.8
Agricultural finance		2.0	9.5	9.0	8.5	8.0	8.0	8.0	6.0	6.0	3.0				0.0	0.0	0.0	68.0
Grain storage	0.6	2.0	3.5	6.3	4.5	0.7	2.4								0.0	0.0	0.0	20.0
Other	2.0	0.7	0.4	3.1	2.3	5.7	4.6	8.1	4.9	4.1	3.2	4.2	2.9	2.3	1.8	3.5	2.3	56.1
Rural development excluding agriculture, of which:	52.6	29.9	40.8	46.5	46.8	93.7	64.9	74.5	71.8	70.9	49.2	57.4	64.0	59.5	89.2	68.4	79.6	1059.7
Rural water	48.2	24.3	26.0	32.2	22.0	62.5	38.9	49.0	45.0	32.2	12.2	30.5	26.6	34.6	39.2	33.3	30.8	587.5
Rural cooperatives	3.9	2.2	1.5	1.9	1.1	2.3	2.6	0.6	0.6	11.4	3.4	5.2	9.4	2.9	17.0	11.5	15.0	92.5
Rural infrastructure			0.2	2.0	0.1	0.1												2.4
Rural health			4.0	3.3	8.4	7.9	11.8	8.6	11.3	7.1	11.3	3.0	1.9	2.0	3.5	2.4	0.3	86.8
Forestry	0.5	3.4	9.3	8.9	13.3	20.9	11.5	16.3	14.9	20.2	22.3	18.7	26.1	20.0	29.4	21.3	33.5	290.5
Industry	5.3	1.4	1.7	6.6		0.3	14.0	15.9	35.7	52.6	93.2	100.7	102.6	118.9	97.5	78.3	89.4	814.1
Transport	39.0				8.0										0.0	0.0	0.0	47.0
Energy	8.6	12.5	13.6	8.6	19.2	7.6	8.0	16.7	27.6	29.2	14.8	4.0	1.7	6.4	16.0	25.2	28.4	248.1
Health	1.2	0.3				0.2						2.6	3.7	1.0	1.2	0.6	0.4	11.1
Education	36.0	12.6	14.0	18.1	21.6	36.2	25.9	35.2	45.2	39.1	52.7	63.3	71.7	55.9	52.8	40.8	51.1	672.3
Planning and administration	7.4	1.8	1.8	1.9	2.9	4.9	13.9	6.2	8.4	7.9	10.9	8.7	15.1	16.9	22.7	24.9	17.8	174.1
Commerce and finance	1.0	0.8	1.9	12.8	11.9	8.4	66.2	56.1	38.3	16.5	5.0	6.5	15.2	14.2	5.7	14.6	24.3	299.3
Import support, of which:			4.0	3.9	62.5	53.7	65.2	28.9	75.0	87.2	68.6	165.5	153.3	157.5	165.3	231.3	181.8	1503.7
Tied to purchases in Sweden								14.8	37.6	32.8	40.0	56.9	103.0	123.9	138.6	163.4	131.9	842.8
Miscellaneous	4.0			10.2	6.2	2.3	0.4	0.2		0.4		1.9	5.7	7.9	13.7	9.5	5.6	67.9
Subtotal	162.3	65.9	95.6	132.2	199.9	228.2	274.3	251.8	316.0	316.5	301.7	420.2	441.1	445.7	470.2	497.0	480.6	5099.3
Aid through nongovernmental organizations	2.6		0.6	0.2	2.7	4.4	4.1	3.7	4.4	4.6	8.8	14.3	15.8	19.0	19.6	24.8	35.2	164.8
Emergency Aid			0.2	0.3				0.1	5.0	25.4		10.0			4.5	2.9	1.9	50.3
Food Aid	0.1		0.2						1.4		0.1		1.3					3.1
Total	165.0	65.9	96.6	132.7	202.6	232.6	278.4	255.6	326.8	346.5	310.6	444.5	458.2	464.7	494.3	524.8	517.7	5317.5

Source: *SIDA, Bistand i siffror och diagram,* annual: SIDA's Accounts Department.

Chapter 4

U.S. Activities to Promote Agricultural and Rural Development in Sub-Saharan Africa

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Note

This presentation and analysis draws heavily on country studies for Cameroon, Nigeria, and Senegal, carried out by William Jaeger, and studies of AID activities in Malawi, Kenya, and Tanzania, prepared by Dirk Dijkerman, as well as a more detailed comparative report drawing on all six studies. See W.K. Jaeger, "U.S. Aid to Cameroon: Its Impact on Agriculture and Rural Development," "U.S. Aid to Nigeria: Its Impact on Agriculture and Rural Development," and "U.S. Aid to Senegal: Its Impact on Agriculture and Rural Development," MADIA Working Papers (Washington, D.C.: World Bank, 1987); Dirk Dijkerman, "Agricultural Development in Southern Africa: An Assessment of A.I.D. Assistance to Malawi," "Agricultural Development in East Africa: An Assessment of A.I.D. Assistance to Kenya," and "Agricultural Development in East Africa: An Assessment of A.I.D. Assistance to Tanzania," MADiA Working Papers (Washington, D.C.: World Bank, 1987); and B.F. Johnston, A. Hoben, D.W. Dijkerman, and W.K. Jaeger, "An Assessment of A.I.D. Activities to Promote Agricultural and Rural Development in Sub-Saharan Africa," MADIA Working Paper (Washington, D.C.: World Bank, 1987).

Introduction

In this chapter, we focus on the activities of the U.S. Agency for International Development (AID) in support of agricultural and rural development in the six countries included in the MADIA study. The emphasis is primarily on AID's promotion of agricultural development in the six countries, with attention given to regional and international programs relevant to the six countries. The study also devotes attention to AID's support of rural development, which consisted primarily of road construction and other infrastructure projects and health and population programs.

U.S. Assistance for Sub-Saharan Africa in a Global Context

During the 1963-84 period covered in this review, AID allocations for agricultural development projects and programs in the six study countries amounted to just over $900 million in constant 1983 dollars (see Table 1). Allocations for rural development totaled not quite $520 million. These two sectors accounted for more than half of the $2.4 billion AID spent in the six countries. Total U.S. assistance for the six was nearly $3.6 billion for the same period—including, in addition to AID's funding of projects and programs, PL 480 food aid, Economic Support Funds (ESF), and the Peace Corps.

For the six countries, and for Sub-Saharan Africa in general, these amounts are modest, compared to the general importance of the United States in the foreign assistance initiatives since World War II. It will be seen below that the role of AID and its predecessor agencies in Sub-Saharan Africa has been (a) limited, (b) relatively late, and (c) subject to large variations over time and in country focus. That contrasts sharply with the dominant role that the United States assumed in foreign aid programs in other developing regions, especially Asia, during the 1950s and 1960s. Looking back over the entire span of development assistance, it seems clear that the unprecedented size and success of the Marshall Plan was a major factor leading to the innovation in international relations represented by the substantial and sustained foreign assistance provided by the Organization for European Cooperation and Development (OECD) countries since the OECD and its Development Advisory Committee (DAC) were created twenty-five years ago[1]. Yet between 1975 and 1985, official development assistance (ODA) provided by the United States has declined from 0.58 percent U.S GNP in 1965 to less than 0.25 percent between 1979 and 1985. Equally striking, however, is the extent to which the decline in the U.S. contribution to foreign assistance has been more than offset by increases in the ODA provided by other DAC countries. Thus, it is estimated that annual ODA from all donors for all developing countries (expressed in U.S. dollars) rose from about US$20 billion to US$29 billion (in constant 1983 prices) between 1966 and 1985, in spite of the fact that the U.S. contribution itself declined from 82 percent of total ODA from DAC countries in 1965 to 30 percent in 1985.[2]

AID's Role in Sub-Saharan Africa

U.S. aid to Africa has been primarily economic aid, with less than 10 percent going to military assistance. Traditionally, Africa has not been the focus of U.S. economic assistance; before 1978 Africa received only about 5 percent of U.S. aid, but since that time, Africa's share has risen above 10

Table 1
Total US assistance to the MADIA countries, 1963-84 (in millions of constant 1983 dollars)

	Cameroon	Kenya	Malawi	Nigeria	Senegal	Tanzania
Total US Assistance	277.7	835.7[a]	190.9	1208.4	428.6	645.3
All projects and programs	213.8	519.4	146.7	943.0	174.3	341.5
Agriculture	85.2	269.3	25.5	284.2	114.7	126.3
Rural development	90.7	135.9	84.1	36.1	13.4	157.6
Other	37.9	114.3	37.1	623.7	46.2	57.5
PL 480 Food Aid	19.7	181.2	12.2	182.5	192.7	247.7
Other Economic Assistance	44.1	135.1	31.9	82.9	61.5[b]	56.1
Total US Assistance						
Per capita (average)	$1.36	$2.10	$1.33	$0.61	$3.25	$1.46
Total Assistance as % of GDP	0.17	0.77	0.65	0.09	0.76	0.64
Assistance to Agriculture and Rural Development as % of GDP	0.11	0.37	0.37	0.02	0.21	0.28
% Share of Total US Assistance to Africa(1963-84)	1.43	4.31	0.98	6.23	2.21	3.33
% Share of AID Assistance to Africa(1963-84)	1.97	4.78	1.35	8.7	1.61	3.14
Share of US in Receipts of Total ODA	6.1	15.4	8.5	22.0	10.4	7.3

[a] excludes military aid ($245 million for Kenya).
[b] includes Peace Corps.

percent. The economic aid has been provided primarily for development programs, food aid, and for budgetary support under the Economic Support Fund (ESF); during most of the 1970s, this type of funding was referred to as "security supporting assistance."

The role of the United States in assisting Sub-Saharan Africa has been modest in comparison with assistance from the World Bank and other multilateral and bilateral donors. Among the six MADIA countries, it was only in Nigeria that U.S. aid for the period 1970-84 exceeded 20 percent of total ODA, followed by Kenya at 15 percent. For the other four countries, the U.S. share ranged from 6 percent of ODA in Cameroon to just over 10 percent in Senegal (where food aid accounted for 45 percent of total U.S. assistance).

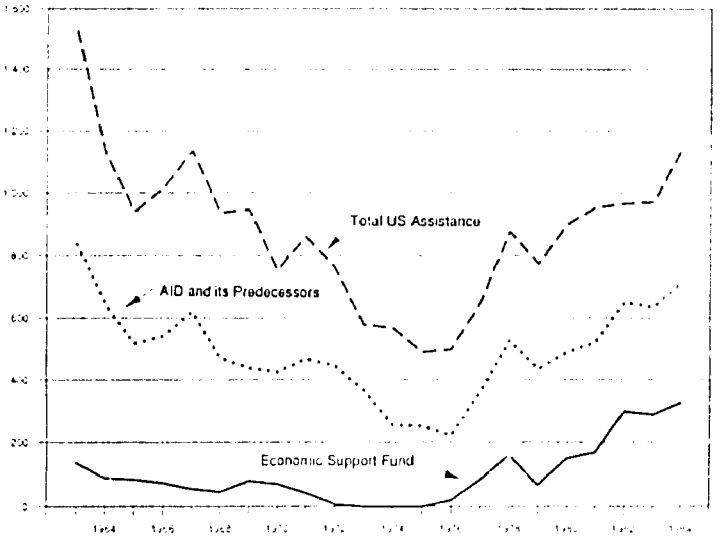
The figures on the U.S. share in total ODA, however, understate the importance of the U.S. role in support of agricultural and rural development. A relatively large share of AID's bilateral assistance was allocated for agricultural and rural development activities. Furthermore, that assistance was directed in considerable measure toward building institutions of higher education in agriculture, such as the three faculties of agriculture in Nigeria. Although U.S. assistance for those and other institutions was sporadic, its contribution to building educational institutions in Kenya, Malawi, and Tanzania as well as in Nigeria seems to have had a clearly positive and lasting impact. It is too early to tell if the same will be true of more recent technical assistance for the establishment of Dschang University in Cameroon.

It is also emphasized, however, that the potential pay-off to investments in post-secondary institutions for agriculture and veterinary medicine has yet to be realized because of limited progress in establishing effective national agricultural research systems. In considerable measure the creation of educational institutions is an "intermediate product," and the return on that investment cannot be realized fully until the locally trained agricultural scientists and other specialists begin to make important contributions to generating profitable and feasible innovations for a large and growing percentage of a country's small farmers—and also to policy research and analysis.

AID bilateral support for agricultural research, on the other hand, has remained a small component of its assistance until recently. For a donor grappling with problems of periodic surpluses at home, the development of agricultural colleges in Africa was less controversial than was directly productive research. In any case, the impact on production would be long in coming, and thus less likely to threaten U.S. interest groups. Although AID and other donors have missed some important opportunities to support the difficult but essential process of developing research capacity, it is important to recognize that this process is inherently long-term and that the substantial assistance that the United States has provided for IITA, CIMMYT, ICRISAT, and other international agricultural research centers has had, and will continue to have, an important impact on agricultural progress in Sub-Saharan Africa.[3]

In constant 1983 dollars, the level of U.S. assistance to Africa was more than $1 billion per year in the early 1960s, after which it declined until the mid-1970s before the level began to rise again. Only in the past three years has U.S. assistance reached levels similar to those of the early 1960s (Figure 1). AID funding has consistently accounted for between one-half and two-thirds of total U.S. economic assistance to Africa.

Figure 1
US economic assistance to Africa, 1963-84



Source: Johnston et al., "An Assessment of AID Activities."

The composition of U.S. economic assistance to Africa has changed dramatically since the 1960s, when development programs dominated. Since the mid-1970s, both food aid and ESF have grown in both relative and absolute terms. Since 1980, the two together have comprised more than half of all U.S. economic assistance to Africa: Of the total $1.1 billion in aid to Africa in 1984, $333 million was food aid and $346 million was ESF. ESF programs are intended to serve U.S. political, security, and economic objectives, and they provide a rapid and flexible disbursement instrument. ESF was used in Africa for a brief period in the early 1960s, but reemerged in the mid-1970s as an important part of the aid program. ESF programs can take the form of commodity import programs (CIP), cash/budget support, or project aid.[4]

A Comparative Assessment of AID in Six African Countries

This review of AID's programs in six African countries also provides a fairly good picture of the nature of AID's support for agricultural and rural development in Africa generally. The types of AID support in the six are representative of AID assistance in Africa as well. For example, the share of AID funding going to education and agriculture in the six countries is similar to the overall shares for Africa as a whole; and food aid represents one-fourth to one-third of U.S. assistance for the six countries and for Africa overall.

The selection of countries for the MADIA study was influenced by the fact that they have experienced relatively more stable political and policy environments than countries such as Zaire, Ethiopia, or Uganda. Only Zaire and Sudan have received more assistance from the United States than Nigeria; and Kenya, Tanzania, and Senegal also rank among the top eleven African countries in terms of assistance received from the United States between 1946 and 1985.

The analysis is focused on four principal questions about the effectiveness of AID's activities in promoting agricultural and rural development:

(1) Were the activities that AID chose to promote appropriate in that they were critical elements of a well-conceived strategy for agricultural and rural development and were capable of having a catalytic effect on efforts being made within the recipient country itself?

(2) Was the country situation favorable—in terms of the policy environment, the timing and sequencing of the activities, and the commitment of the country's political leadership to the objectives of the programs undertaken?

(3) To what extent are U.S. experience, technical expertise, and institutional models appropriate to the host country's needs and context?

(4) Does AID have, or can it obtain, the institutional capacity to effectively plan and implement the activities necessary for the success of this type of program under host country conditions?

The first question turns out to be especially difficult and important because of the lack of consensus concerning the type of development strategies that should be promoted by AID. For example, a recent survey of U.S. Aid to Africa carried out by the Congressional Research Service argues that there is a continuing "tension in the debate over U.S. assistance for African development between 'top-down' and 'bottom-up' strategies of economic growth."[5] A major thesis of this chapter—and of the study on which it is based—is that this common polarization of the debate is based on the unfortunate and misleading perception of a dichotomy between growth and equity. Over the past thirty-five years, a good deal of cumulative progress has been gained in our understanding of the complex processes of agricultural and rural development. Asian experience especially has emphasized that the trade-offs between growth and equity objectives can be minimized if serious attention is given to devising and implementing development strategies that are well balanced and effective in furthering multiple objectives. The present study seeks to draw upon the most important lessons of the past thirty-five years in order to outline an analytical framework for assessing AID's effectiveness in supporting agricultural and rural development. In spite of the continuing controversy, there is an emerging consensus among development specialists that policies and programs should be effective in attaining multiple objectives. In particular, there is a need for agricultural strategies that are effective in simultaneously accelerating the growth of agricultural output and in generating opportunities for productive employment for a large and growing labor force.

The remainder of this chapter takes up these questions, relying heavily—but not exclusively—on AID's experiences in the six MADIA study countries. Following a description of AID's involvement in each of the six countries, the fourth question, which addresses AID's institutional capacity to design, implement, and sustain a successful assistance program in Africa is taken up. AID's organizational structure, as well as its relationship to Congress and U.S. political constituencies, are shown to be constraints on effective development assistance. A final section assesses the impact of AID's various types of activities across the six countries, and judgments about the reasons for the degree of success or failure achieved.

Overview of AID's Assistance to the Six Countries

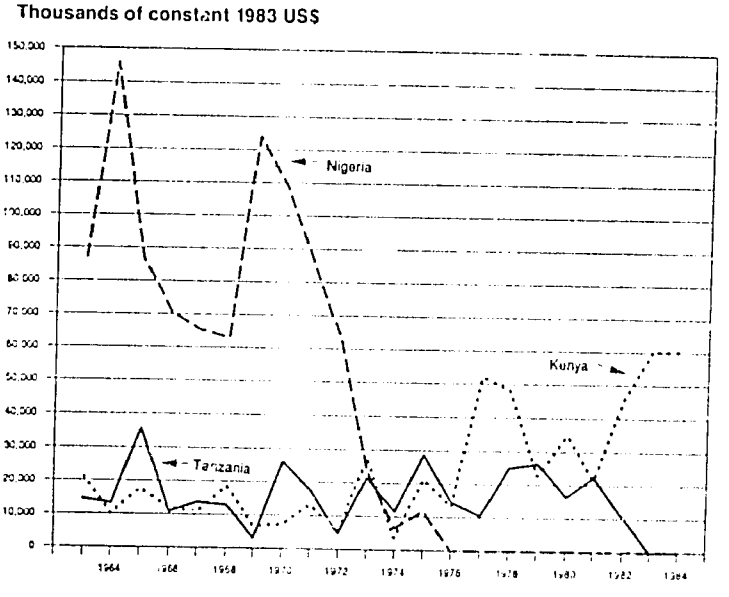
The six MADIA study countries differ considerably in the size, pattern, and content of U.S. assistance. Nigeria has received the highest total assistance. Between 1963 and 1984, U.S. assistance to Nigeria totaled $1.2 billion when valued in constant 1983 dollars (see Table 1). Kenya, with $835 million has had the second largest program, followed by Tanzania ($645 million), and Senegal ($428 million). The smallest programs have been those in Cameroon and Malawi, receiving $277 million and $190 million, respectively.[6] Looking at country shares, Nigeria has received over 6 percent of total U.S. assistance to Africa, although nearly 9 percent of the AID total, while Malawi has received less than 1 percent of total U.S. assistance to Africa, but a slightly larger share (1.35 percent) of AID's funding.[7] The ranking of the six is quite different in terms of per capita aid averaged over the twenty-two year period. With a population of only 6 million, Senegal's average annual assistance was by far the highest, $3.23 per capita. Kenya ranked second, with an average of $2.09 per capita. Nigeria, with 90 million people (a population 50 percent larger than that of the other five combined) is lowest, with an average of $0.60 per capita per year.

When compared to national GDP, U.S. aid to both Senegal and Kenya has averaged 0.75 percent of GDP, followed closely by Tanzania and Malawi at around 0.65 percent. Cameroon and Nigeria, the two petroleum exporters, received much smaller amounts relative to their GDP.

Patterns of U.S. Assistance to the Six Countries

The levels of assistance to the six countries over the past twenty-five years have fluctuated (Figures 2 and 3)—in part because of changes in U.S. funding levels for Africa as a whole. Although AID's experience in each of the six countries differs, a number of events (and responses to them) affected several of the countries. The recommendations of the 1966 Korry Report that AID concentrate on a small number of priority countries resulted in the phasing out of bilateral programs in Senegal, Cameroon, and Malawi. But in both Senegal and Cameroon, the AID

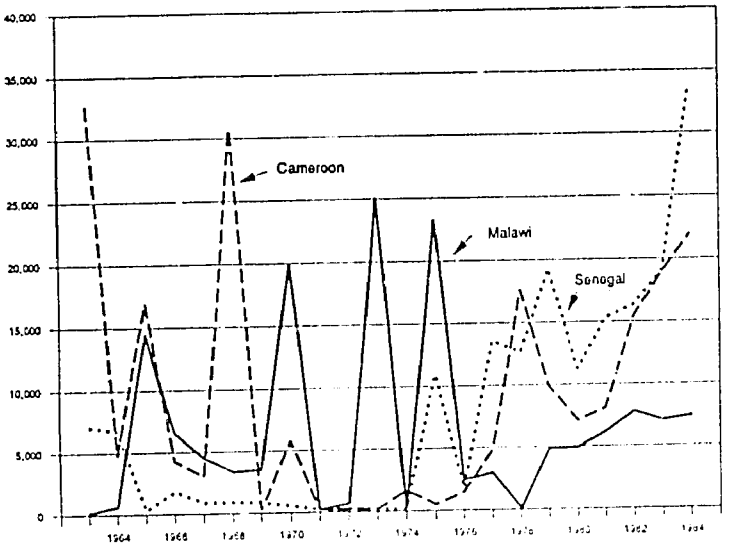
Figure 2
AID project and program assistance to Nigeria, Kenya, and Tanzania, 1963-84



Source: Johnston et al., "An Assessment of AID Activities."

Figure 3
AID project and program assistance to Senegal, Cameroon, and Malawi, 1963-84

Thousands of constant 1983 US$



Source: Johnston et al., "An Assessment of AID Activities."

program was later enlarged and redirected as a result of the Sahel drought in the early 1970s—although the effect on AID's Senegal program was more pronounced. Malawi, Cameroon, and Senegal were all characterized by low and somewhat erratic funding levels until the mid-1970s (Figure 3). The large spikes in Figure 3 between 1969 and 1975 were for regionally funded infrastructure development—railroads in the case of Cameroon and for highway construction in Malawi.[8]

Because of its size and the priority that it received during the Kennedy Administration years, aid for Nigeria dominated U.S. assistance to the six countries until the early 1970s (Figure 2). U.S. aid for Nigeria reached a peak of $87 million in 1969, immediately after the civil war (representing $248 million in constant 1983 dollars). Beginning in 1972, the U.S. rapidly phased out its bilateral aid to Nigeria because of large increases in petroleum revenues. By 1977 the AID mission was closed, and since that time Nigeria has benefited only from a small program grant and from regional and centrally funded AID programs such as support for IITA in Ibadan and some health and population activities.

Both Kenya and Tanzania have received relatively steady levels of AID assistance over most of the period under consideration, although AID's program in Tanzania recently has been phased out. Kenya is the only country among the six to receive a generally growing U.S. economic assistance program—due to its increased political importance to the United States.

In addition to the country AID missions, regional accounts and centrally funded programs contribute importantly to AID's total assistance program for Africa. More than 10 percent of U.S. assistance to Africa has been obligated through regional accounts. Since 1963, seven different regional accounts have been used for specific regions within Africa, or for special purposes. Several of these accounts administered only minor amounts and have been discontinued. Between 1963 and 1984, $1.35 billion was disbursed through AID's Africa regional accounts (in constant 1983 dollars).

In addition to these regional accounts, centrally funded assistance plays an important role in AID's Africa programs. For example, centrally allocated funds to support the Consultative Group on International Agricultural Research (CGIAR) are used in core funding for IITA and other international centers active in Africa.[9]

Sectoral Distribution of AID Funds

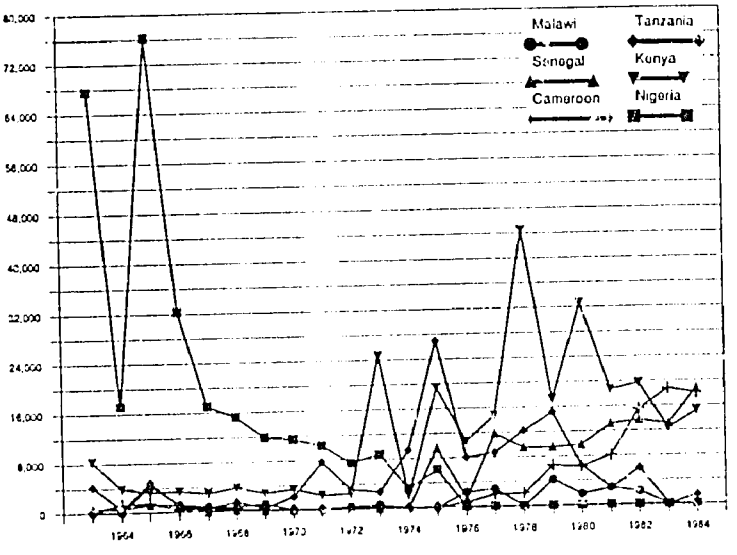
AID funding is broken down by sector and subsector below for each of the six countries. Additional detail is given in the country studies by Jaeger and Dijkerman. Project funds are assigned to specific subsectors, depending on the activities undertaken.[10] The choice of categories was based on the intended focus of the study and to facilitate consistency with the other MADIA donor studies. Compiling these data proved to be a complex and time-consuming task due to missing or conflicting data, especially for the earlier period. Assigning annual project funds to specific categories was a major undertaking and would have been impractical for all of Sub-Saharan Africa.

The shares of AID funds allocated to agriculture in these countries have fluctuated enormously from year to year, although there was a trend toward increased emphasis on agriculture during the 1970s (Figure 4). The average share of AID obligations for agriculture plus "rural development" was 60 percent for the six countries (Table 2). Within those two sectors, the largest subcategories have been agricultural education and training, and rural infrastructure—each with about 13 percent of the AID total. These are followed by input supply (6.9 percent)—which includes both seed multiplication farms and fertilizer import programs—and livestock (5.4 percent). Agricultural extension, research, management and planning, and health and population have all received from 2 percent to 4 percent of the total AID funds.

In several cases, individual countries diverge considerably from this average profile. Agricultural education is not

Figure 4
AID agricultural assistance to the MADIA countries, 1963-84

Thousands of constant 1983 US$



Source: Johnston et al., "An Assessment of AID Activities."

Table 2
Sectoral composition of US assistance to the MADIA countries, 1963-84 (in millions of constant 1983 dollars)

Sector and subsector	Total	Percentage	Cameroon	Kenya	Malawi	Nigeria	Senegal	Tanzania
AID Projects and Programs	2407.7	100.0	213.8	550.1	943.0	152.2	174.3	374.2
Agriculture, of which	905.2	37.6	85.2	269.3	284.2	25.5	114.7	126.3
Crop production	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Storage and Processing	21.9	0.9	0.0	8.1	4.0	0.0	9.9	0.0
Input supply	161.6	6.7	13.5	89.6	0.0	0.0	15.3	43.2
Credit	11.9	0.5	1.6	5.5	3.2	0.0	1.5	0.0
Research	55.9	2.3	6.2	5.8	14.3	10.1	4.7	14.9
Extension	77.4	3.2	5.5	2.6	36.0	0.0	26.4	6.9
Education and Training	311.9	13.0	36.0	80.5	136.0	15.5	11.8	32.2
Planning and Management	80.6	3.3	6.0	27.5	26.8	0.0	15.1	5.2
Irrigation	40.0	1.7	7.2	0.0	23.2	0.0	9.5	0.0
Marketing	3.2	0.1	0.0	0.0	0.0	0.0	0.0	3.2
Livestock	127.3	5.3	8.3	43.7	38.5	0.0	16.0	20.9
Forestry	9.6	0.4	0.0	5.3	0.0	0.0	4.3	0.0
Fisheries	3.9	0.2	0.8	0.6	2.1	0.0	0.3	0.0
Rural Development, of which	517.8	21.5	90.7	135.9	36.1	84.1	13.4	157.6
Infrastructure	308.7	12.8	78.4	48.4	28.3	69.1	6.6	77.8
Health and Population	84.8	3.5	4.5	27.7	7.7	0.0	6.7	38.2
Education	6.5	0.3	6.5	0.0	0.0	0.0	0.0	0.0
Water supply	7.0	0.3	0.8	0.0	0.0	6.2	0.0	0.0
Community Development	41.7	1.7	0.4	29.0	0.0	3.3	0.0	8.9
Other	985.6	41.0	37.9	144.9	623.7	42.6	46.2	90.3
Food Aid	836.0		19.7	181.2	182.5	12.2	192.7	247.7
Other Economic Assistance	411.8		44.2	135.1	82.9	32.0	61.5	56.1
TOTAL	3586.5		277.7	835.7	1208.4	190.9	428.6	645.3

[a] excludes military assistance.

as predominant in Senegal as in the other countries. And rural infrastructure has only been of minor importance for Nigeria and Senegal, but has been the largest subsector for Malawi, Cameroon, and Tanzania. Funding levels have been highest for input supply in Kenya, and for agricultural extension in Senegal, where most of the agricultural projects had large extension components (Table 2). The patterns of emphasis over time for several of these subsectors are shown in Figures 5-10. The high share of total obligations for agricultural education results from the Nigeria program in the 1960s and early 1970s, and from Kenya and Cameroon in the late 1970s (Figure 5). AID's focus in the area of extension was reduced at the end of the 1960s, but then expanded in Senegal and Cameroon after the Sahel drought.

AID bilateral support for agricultural research is recent; earlier funding in agricultural research was made through regional and centrally funded accounts. Figure 7 indicates that by 1979, four of the five existing missions (the Nigeria mission had closed) expanded their support in this area. The levels, however, have been relatively low. The support for agricultural research in Nigeria in the 1960s shown in Figure 7 amounts to less than 2 percent of the total AID program during that period. As discussed below, research has been an important part of regional and centrally funded programs for Africa.

Significant programs for developing livestock were undertaken in Nigeria and Kenya in the 1960s (Figure 8) The Kenya livestock program was continued and expanded in the 1970s, while new programs were introduced in Senegal and Tanzania. Input supply (which includes both production level input support and commodity import programs) did not receive much attention from AID until the early 1970s, when Kenya and Tanzania received large amounts in this subsector. In the case of Tanzania, this was mainly for seed multiplication activities, while in the case of Kenya, the funds were for fertilizer import programs (Figure 9).

Investments in rural infrastructure (Figure 10) represent an important part of AID's assistance programs in four of the six countries (Senegal and Nigeria being the exceptions). Development loans and grants for highways, rural roads, and a railroad in Cameroon were important components of many of AID's country programs in the 1960s and early 1970s. Subsequently, very little has been done in this area—due to the Africa Bureau's avoidance of this kind of aid following the shift in emphasis to poverty-oriented basic needs programs.

In the 1980s, nonproject assistance tied to policy reform issues has become an important part of the AID program in Kenya, Malawi, and Senegal. Such assistance most often has taken the form of commodity import programs.

Figure 5
AID assistance to agricultural education

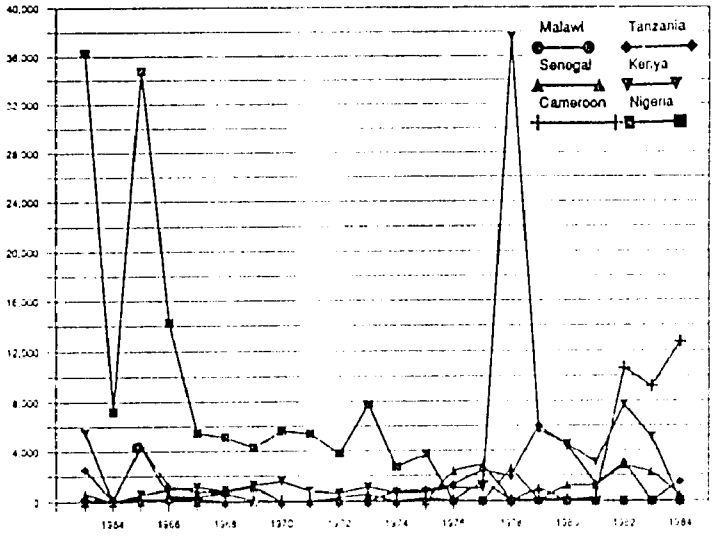
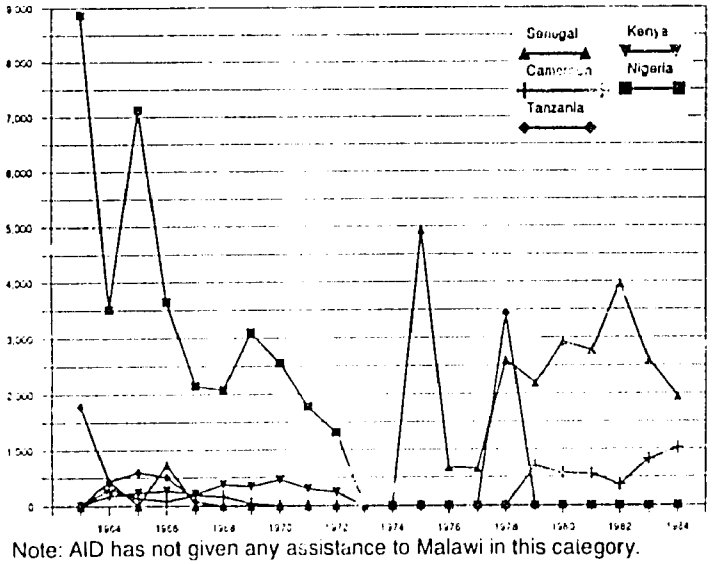


Figure 6
AID assistance to agricultural extension



Note: AID has not given any assistance to Malawi in this category.

Figure 7
AID assistance to agricultural research

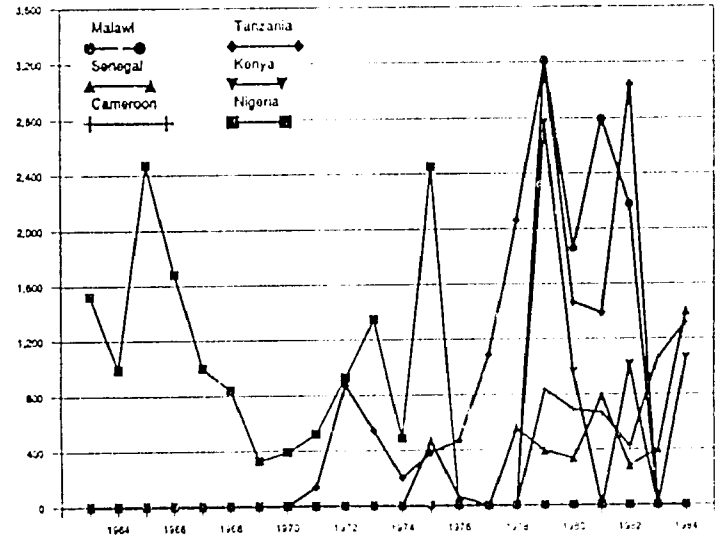
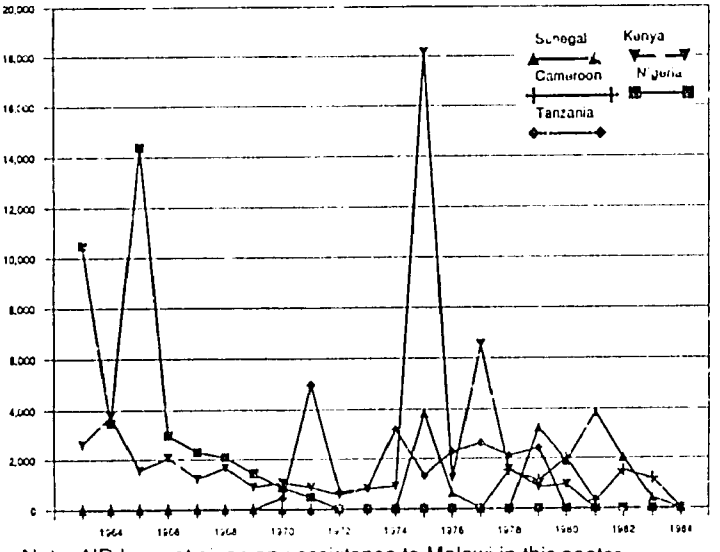
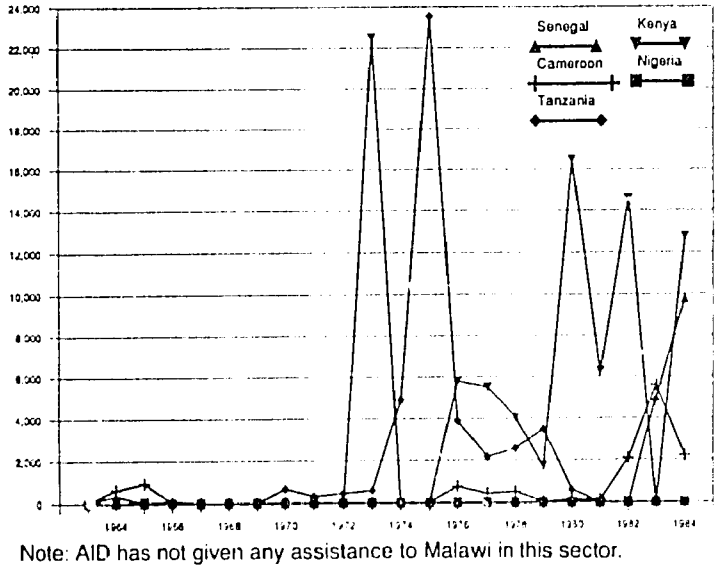


Figure 8
AID assistance to livestock



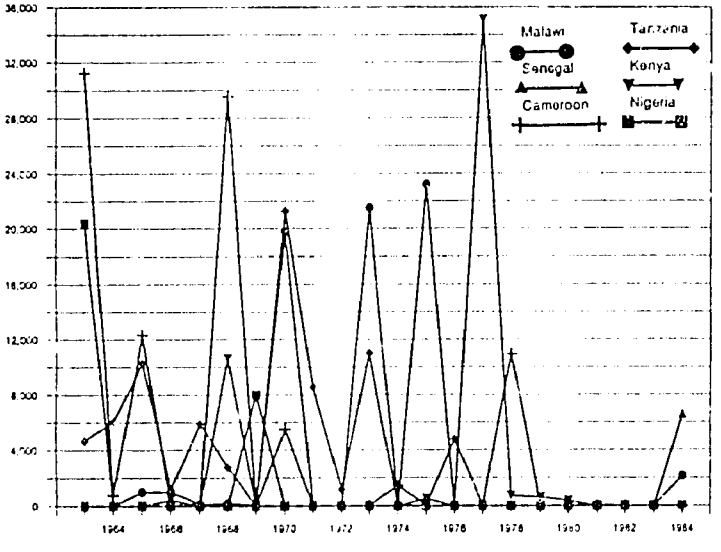
Note: AID has not given any assistance to Malawi in this sector.

Figure 9
AID assistance to input supply



Note: AID has not given any assistance to Malawi in this sector.

Figure 10
AID assistance to rural infrastructure



Source: Johnston et al., "An Assessment of AID Activities."

Impact of AID's Project and NonProject Assistance

This section is based on the conviction that efforts to increase effectiveness of AID's future activities will require a) better understanding of the types of activities that merit priority, as well as b) improved implementation of those activities that AID decides to support. In brief, there is a need to reach an agreed understanding of what *should* be done and of what *can* be done, given the severe financial and personnel constraints faced by local governments and the limited extent to which AID assistance can overcome those constraints.

To provide a framework within which AID's activities can be placed and judged, it is necessary to establish an understanding of the nature and process of development. One of the most significant advances in economic understanding of the development process during the past thirty-five years has been the recognition that increases in conventional inputs of labor, land, and capital frequently account for less than half of increases in national output.[11] In virtually all countries that have achieved impressive progress in agricultural development, technological change leading to increases in total factor productivity—i.e. in output per unit of total inputs—have been a major source of the growth of agricultural production.[12]

It is therefore appropriate to derive from this cumulative advance of understanding a set of general propositions to guide our analysis. Clearly, AID's effectiveness in furthering agricultural and rural development depends not only on how well its activities have achieved their specific goals, but also on whether the activities it chose to support constitute critical elements of a well-conceived strategy for agricultural development.

As a point of departure for identifying those crucial elements of the development process, we adopted a conceptualization of development as a "generalized process of capital accumulation" in which capital is defined broadly to include not only *physical capital* (plant and equipment, natural resources) but also *human capital* (in the form of skills and professional competence), and *social capital* (in the form of economically useful knowledge, organizations, and organizational competence). This conceptual framework, derived from H.G. Johnson, is elaborated in greater detail in the MADIA report by Johnston et al.[13] This view of development emphasizes the role of efficient social and economic mechanisms for maintaining and increasing large per capita stocks of capital, including policies and institutions that permit and encourage efficient use of that capital. Thus H.G. Johnson characterizes the process of economic growth as:

> a generalized process of capital accumulation, that is, of investment in the acquisition of larger stocks of the various forms of capital; and the condition of being "developed" consists of having accumulated, and having established efficient social and economic mechanisms for maintaining and increasing large stocks of capital per head in the various forms.[14]

In order to achieve this, a reasonable *balance* must be achieved among activities that foster growth in these various types of capital, as well as strengthening the various mechanisms that permit efficient use of those forms of capital. AID's emphasis on "policy dialogue," and the current concern of donors and African governments alike with structural reform, are of great importance as preconditions for achieving *development based on a balanced and generalized process of capital accumulation.*

This view of development does not ignore the importance many give to judging development by welfare and equity criteria. Rather, it incorporates the lessons learned from the "basic needs" approach popularized in the mid-1970s. Thus it emphasizes that public investments in education, health, and nutrition can contribute in important ways to increased human welfare and to economic growth.[15] It is, however, the growth in the economic base that makes it possible to finance those investments. Moreover, it is the type of development strategy—including, importantly, the *pattern* of agricultural development—that largely determines the extent to which a country's rural and urban populations participate in increases in productivity and income that enable them to more adequately satisfy their basic needs for food and other essential goods and services. This view of the development process is now widely held among development specialists.[16]

This cumulative advance in understanding provides a basis for drawing some important policy conclusions and presenting guidelines about a number of critical elements of a coherent development strategy.[17] With respect to the role and limits of government action, a wealth of experience in many countries has demonstrated the efficiency advantages of decentralized decisionmaking by independent farm units. Quite generally, reliance on markets and prices to allocate most types of goods and services leads to a more efficient outcome than hierarchical social processes. The problems that arise because of imbalances between public sector responsibilities and resources are especially serious in Sub-Saharan Africa, where scarcity of the critical resources of administrative capacity, analytical skills, and government revenues is so severe. This underscores the need for the most efficient use of those scarce resources, institutional arrangements that minimize dependence on government involvement, and enlarging the stocks of key human resources. But clearly certain strategic *public goods and services* can play a crucially important catalytic role. Public support for agricultural research, education, and basic health services, including family planning, is crucial. Because of their nature as public goods, private investment in such activities would be far below the level that is socially desirable. Public support for strategic investments in infrastructure is also essential, and the decisive role of government in macroeconomic management is inescapable.

Much has been learned about the importance of complementarities and efficient timing and sequencing for many investments in physical, human, and social capital to accelerate the expansion of agricultural output. There is also increased awareness of the critical importance of prices of capital, foreign exchange, and farm products and inputs that reflect their scarcity value. These prices influence not only the decisions of farmers and firms, but also the allocative decisions of agricultural administrators and scientists and the rate and bias of technological change.[18] Given the multiple growth paths faced by developing countries, the direction of both technical change and

institutional change will be influenced by distortions in the economy, such as those that favor a subsector of large and capital-intensive farms.

On the basis of the cumulative progress that has been made in advancing understanding—which is beginning to include a better understanding of the basic characteristics of African farming systems—it seems possible to define some general priorities that would now be widely accepted among development specialists. These propositions should not be taken as a list of what AID should do. AID's activities as one of many donors will have to be further restricted by a recognition of its limited available resources and of its comparative advantage. The eight propositions are:

(1) Support efforts by host governments to define carefully their development priorities and to coordinate the activities of AID and other donors so that they fit national priorities and do not, in aggregate, exceed a country's financial and administrative capacity for effective implementation.

(2) Invest in human capital formation, including rural schooling and literacy programs, and build institutions of higher learning needed to support efforts to strengthen agricultural research systems, policy research and analysis, and the management of agricultural and rural development.

(3) Assist in the development of effective national agricultural research systems oriented toward the needs of smallholders. Farming Systems Research and other techniques for improving the two-way flow of information between farmers and research workers represent important supplements to formal research, but they clearly are not substitutes for on-station and usually commodity-oriented research.

(4) Strengthen the capacity for policy analysis and policy research and for establishing information systems that provide the most essential data needed to improve the quality of governmental decisionmaking.

(5) Improve the quality of policy dialogue to encourage policies favorable to effective and sustained agricultural and rural development; constructive *dialogue* requires better policy research and analysis by AID as well as by host country participants. It is obviously important for macroeconomic policies, and also appears to be important in encouraging and supporting initiatives in the rural nonfarm sector as well as in agriculture.

(6) Promote a more accurate understanding of the respective strengths and weaknesses of public and private sector activities, so that their roles are defined with a view toward maximizing the relative advantage of each.

(7) Make and facilitate investments to extend and improve a country's rural infrastructure of roads, communications, electric power, and water supplies for farm and household use and for rural manufacturing and service firms.

(8) Provide encouragement and support for affordable rural health and family planning programs, with emphasis on the interrelated objectives of improving child health and survival prospects and reducing fertility.

Clearly, AID's priorities should take account of activities of other donors as well as the programs of the host government. It is also necessary to determine priorities within as well as among categories. The crucial consideration in all instances is to maintain a sensible balance between objectives and resources so that projects and programs are *sustainable*. In some instances, that should probably include highly selective commitments by AID to provide assistance over a number of years for meeting recurrent costs in local currency and similarly selective allocations of foreign exchange. In the long run, however, external resources cannot substitute for local resources—which once again underscores the importance of *a generalized and balanced process of accumulating capital—physical, human, and social.*

Successes and Setbacks

The evidence from the six country studies (referred to in the initial note) indicates that the success of AID's activities to promote agricultural and rural development has been mixed. In a number of cases, successful implementation, combined with "intermediate indicators" of impact, supports the conclusion that these activities have contributed to agricultural and rural development, as broadly defined. In other areas, and in specific cases, AID's efforts have been frustrated by a number of factors.

Various reasons account for the differing degrees of success among different types of activities and between countries. In agricultural education and training and in infrastructure development, significant success can be found in the experiences in the six countries. Promising progress has been made in agricultural research, although AID's involvement until relatively recently has been small; as a result, and because of the long gestation period that is characteristic of research, it would be premature to draw conclusions about the success of these activities. AID's involvement in nonproject assistance to promote policy reform—such as commodity import programs—is likewise relatively recent, making it difficult to draw strong conclusions. In contrast to education and infrastructure, many of AID's activities in areas such as extension-based production projects, integrated rural development, seed multiplication, and livestock were much less successful. The degree of success, and the reasons for it, differ between countries and between projects. The sample of cases from the six countries sketched below both provides detail about what AID did and examines and distinguishes among the reasons for differing degrees of success.

Agricultural Education and Training

Between 1951 and 1966, AID and its predecessor agencies initiated 67 institution building contracts with 35 U.S. land-grant institutions involving 39 countries.[19]

The clearest examples of AID's success in this area are from Nigeria, where institution building efforts were undertaken shortly after independence at three Nigerian universities. In each case, a U.S. land-grant university supported the establishment of a faculty of agriculture in the new universities: the University of Nigeria in eastern Nigeria under a contract with Michigan State University (MSU), the Ahmadu Bello University (ABU) in northern Nigeria with support from Kansas State University (KSU) and the University of Ife in western Nigeria under a contract with the University of Wisconsin. KSU also entered into a contract with AID for the establishment of a Faculty of Veterinary Medicine at ABU.[20]

The most successful of these was ABU, where AID's involvement began in 1962. A total of $21.2 million was obligated for six separate projects in support of ABU's Faculty of Agriculture, Faculty of Veterinary Medicine, the Institute for Agricultural Research (IAR) adjacent to the University, the Extension and Research Liaison Service, and agricultural schools at Kabba, Samaru, Mando Road, and

Vom.[21]

The critical importance of sustained support over a long period of time is made clear in this case—AID involvement at ABU lasted for seventeen years. Yet, even in this case, there seems to be a consensus that AID's support for ABU was terminated prematurely and too abruptly. AID's mode of operation in this early period enabled qualified and enthusiastic experts to play a major role in planning as well as implementing activities, and it provided for more continuing and flexible support than has generally been the case in subsequent periods. These early institution building efforts were successful, too, because they occurred at a time when Nigeria's government and people were convinced of the essential importance of education. Thus the timing of these particular investments was appropriate not only in terms of their sequencing as part of a well-conceived strategy for agricultural development, but in terms of having the support of a host government that was genuinely committed to these efforts.

Judgments of the impact on agricultural development of those endeavors is difficult. There is no doubt that an indigenous capacity to train agricultural scientists and administrators is a necessary requirement for satisfactory progress in agricultural and rural development. It seems equally clear that the AID-funded assistance by the U.S. land grant universities made significant contributions to the creation of Nigerian institutions with the capacity to provide that training. The AID/KSU project is given much credit by Nigerians and other informed observers for the coordination of teaching, research, and extension at ABU. The Nigerians, who now fill virtually all faculty and research positions in both ABU and IAR, have been successful in molding the institution to fit Nigeria's needs and resources.

A number of Nigerians trained in the institution building programs for those three universities have played key roles in establishing other Nigerian universities in recent years. The role of ABU's faculties of agriculture and veterinary medicine in helping to establish new universities in other states of northern Nigeria seems to have been especially noteworthy.

It should be pointed out that the established universities have not been adequately supported by the government during the oil boom. In that buoyant climate, the emphasis was on creating new colleges and universities. It also appears that too many agricultural research institutes were established. With the sharp decline in foreign exchange receipts and government revenue in recent years, the faculties of agriculture and veterinary medicine are now being crippled with severe funding constraints.[22]

In Kenya, Tanzania, and Malawi, AID has supported agricultural colleges with some success, but the support has been quite sporadic. Major efforts to establish an agricultural university at Dschang in Cameroon are still in the early stages. The sporadic nature of the support in Kenya, Malawi, and especially in Tanzania was partly due to disruptive policy shifts. For example, as a result of the New Directions legislation, the AID mission in Tanzania rejected a request by the government to support advanced degree training in agriculture, noting that Washington preferred projects that "benefit the poor directly in the shortest amount of time possible."[23]

In Kenya, AID's support for agricultural education has concentrated on the Egerton College of Agriculture. Established initially to provide agricultural training to European farmers, the college had earned a reputation as a high-quality educational institution, attracting students from other African countries, as well as from donor programs. AID, assisted by ten other donors, engaged in a long-term program of expanding and strengthening the institution in the 1960s. The college's leadership, originally expatriate but "Africanized" by 1966, played a crucial role in the expansion process and in coordinating donor assistance.

Similarly, in Tanzania, AID supported the development of the Morogoro College, launched in 1961 with assistance from the Rockefeller Foundation. In 1962, AID entered into a contract with West Virginia University to assist in establishing a college that would be capable of meeting the country's need for diploma-level agriculturists. Over time, Denmark and other donors helped offset the effects of AID's fluctuating support.

Participant training for Morogoro, however, proceeded slowly. This reflected the fact that Tanzania, compared with Kenya, had fewer secondary educational facilities before independence. In addition, the government of Tanzania pursued an explicit policy of emphasizing primary education and limiting the number of secondary schools. The relative shortage of qualified applicants for overseas training has limited the pool of B.Sc. applicants so that more training needs to be financed at that level before any M.Sc. or Ph.D. training can be undertaken, thus "lengthening the time needed to build a cadre of people who can serve as trainers to the next generation of Tanzanians."[24] The government's decision to raise the status of the college by its recent reorganization as Sokoine Agricultural University indicates that it recognizes the need to educate agricultural scientists and other specialists and administrators.

In addition to institution building, AID has supported agricultural education through long-term training. Since the early 1960s, university training has been funded by AID through programs like the African Graduate Fellowship Program (AFGRAD), the African Scholarship Program for American Universities (ASPAU), and the InterAfrican Fellowship Program (INTERAF). Between 1956 and 1984 an estimated 1,681 Tanzanians completed degree and nondegree training, and 1,839 participants from Kenya received training in the United States. In Cameroon, 575 participants were trained in the United States between 1961 and 1982. Roughly 60 percent of all participants received their training in fields related to agriculture—agronomy, animal sciences, biology, entomology, general agriculture, livestock production, plant breeding, range management, veterinary medicine, and agricultural economics.[25]

Follow-up studies on trainees from AFGRAD and other programs indicate a high degree of success, with 87 percent of the alumni from these programs living and working in Africa. Educational and research institutions have employed about half of these graduates. A high percentage of those trained for positions at Egerton and other USAID-supported institutions have in fact taken up those positions, and about a fourth have worked in governmental and parastatal organizations. Most importantly, the survey concludes that "over half of the older alumni now have major responsibility for policy formulation and decision-making in their respective places of employment."[26]

Through the International Agricultural Research Centers (IARCs) of the CGIAR system, AID contributes to a wide range of agriculture-related educational programs. IITA, the International Institute for Tropical Agriculture in Nigeria, alone provided training for 2,860 participants from 42 African countries between 1970 and 1984.

Investments in human capital formation are highly complementary with other critical elements of strategies for

agricultural and rural development. They are more "durable" than investments in many other projects that tend to be vulnerable to changes in government policies or in circumstances affecting project implementation, such as changes in international prices. This is an area in which AID appears to have a comparative advantage. It is able to rely on a large number of U.S. institutions of higher learning that rank with the best in the world and that are especially strong in the agricultural sciences.

There are, of course, questions about the relevance of training in the United States for future work in African countries. Indeed, that is one of the reasons why helping to establish and strengthen African institutions of higher education is of such fundamental importance. Their existence should make it possible to limit future participant training in the United States to advanced or specialized training not yet available in Sub-Saharan Africa. In the case of Ph.D. training, it seems important for dissertation research to be carried out in Africa so that the problems addressed, as well as the laboratory and other resources available, will be relevant to a scientist's future research.

Although an indigenous capacity to train agricultural scientists is a necessary requirement for satisfactory progress in agricultural development, it is not a sufficient condition. As noted earlier, the teaching role of universities is essentially an "intermediate product." To fulfill their potential, these institutions must also acquire the capacity to contribute, directly and indirectly, to the development and testing of the technical innovations so critical to successful agricultural development.

Rural Infrastructure

AID's support for rural infrastructure development in Africa has been primarily in transportation. During the 1960s, AID participated in a multi-donor project for major extensions of the TransCameroon railway, as well as Farm to Market Roads and Highway Development projects in that country. In Tanzania, AID also funded major portions of the TANZAM highway connecting Zambia with the port of Dar es Salaam. In Malawi, AID's support for road construction accounted for 47 percent of all AID projects and program assistance between 1963 and 1984.

It can reasonably be asserted that AID's investments in improving transportation networks have had a significant long-term impact improving market access, reducing costs, and enhancing and facilitating the integration of rural economies. These activities from the 1960s appear to have been implemented with relatively few difficulties, whereas more recent infrastructure projects, such as construction related to the agricultural university in Cameroon, have been much more problematic, especially due to increasingly complex requirements in the contract bidding and awarding procedures within AID. Provided that maintenance has been supplied—and in many of these cases it has—these investments appear to have had a lasting impact, in part because they are durable investments unaffected by changes in governments, policies, or international prices, and also because they are relatively straightforward to implement, in that they do not require extensive and prolonged supervision and management. Furthermore, they are clearly investments in Africa's physical capital, and a prerequisite to growth of market-oriented agricultural economies.

There is no reason to believe, however, that the United States has a comparative advantage any longer in providing assistance for rural infrastructure projects. It is worth noting, however, that investments in road construction are likely to be reasonably effective uses of AID funding on occasions when it becomes politically attractive to act quickly to provide increased assistance to a country, as appears to have been the case with Tanzania at the time that the United States provided substantial assistance for the TANZAM road project.

Agricultural Research

AID has supported agricultural research in Africa, but the share of assistance devoted to it has been small—2.3 percent in the six MADIA countries—and many of these activities have been short-term, fragmented efforts that could not be expected to make a significant contribution to the necessarily long-term task of building a national capability for research.

In Kenya, AID provided technical assistance in the 1960s to help establish a comprehensive breeding improvement program at Kitale. However, a lack of continuity in support for maize research and a number of shifts in priorities have reduced the impact of AID's assistance for maize research in Kenya. Particularly unfortunate was AID's failure to complete the job that was started at Kitale in building the capacity for a strong and sustained national maize breeding program. A shift in emphasis from the high-altitude to the medium-altitude regions appears to have been justified by the success achieved; the spread of new hybrids of maize adapted to the medium-altitude areas of the Central province matched the earlier rapid spread of hybrids suited to high-altitude areas of western Kenya. The emphasis on breeding for protein content and quality appear, however, to have diverted scarce resources away from more important objectives. A shift in emphasis of AID-supported maize research to semiarid areas of eastern Kenya also appears to have been questionable.[27]

Experience in Tanzania reveals similar problems that have limited the impact of AID's efforts to support agricultural research programs. By the late 1960s, the need to strengthen Tanzania's agricultural research system had been identified as a priority for AID assistance. The research project, finally initiated in 1973, suffered from major implementational problems, including unsatisfactory communication between researchers and farmers, the inability of the government to provide qualified trainees for the project, and various "systemic" problems that were making it more and more difficult to undertake development work in Tanzania.[28] In 1982, an $8.3 million Farming Systems Research Project was initiated, and the government agreed to reorganize research activities under a Tanzanian Agricultural Research Organization. In view of the economic situation in the country at the time, and the problems of recurrent financing faced by the government, AID had to eventually allocate local currency generated by its food aid program to assist with the maintenance and operation of the research station.

Two factors appear to be most important in accounting for AID's relative neglect of agricultural research. First has been the persistent tendency toward "technological optimism" that has accounted for an "extension bias" in Africa and other regions as well. Second, the New Directions legislation emphasis on trying to find ways of directly satisfying the basic needs of the poor diverted attention away from longer-term institution building efforts. The contribution of research was regarded as too slow, and

there was a stubborn tendency to assume that technical solutions were available and could be readily transferred.

The reasons for the lack of success in research programs are also numerous. The difficult and diverse physical environment for agriculture is one obvious factor. A number of assumptions implicit in American and Asian models of food crop research were misleading. The relative abundance of land in Sub-Saharan Africa led to a widespread view that a direct shift from handhoes to tractors would make a major contribution to increasing agricultural productivity and output; this ignored the cash income/purchasing power constraint and other factors that usually make it uneconomical to shift directly to tractor-based technologies.[29] Following the success of the green revolution in Asia, there was a tendency to focus too exclusively on improved seed-fertilizer combinations and other yield-increasing innovations, overlooking the fact that such innovations are not attractive to farmers when land still has little scarcity value. More generally, there was little understanding of the complex farming systems evolved by African farmers. As a result, many of the innovations recommended by research scientists and extension staff were neither feasible nor profitable given the labor and cash income constraints that farmers faced.

The fact that Malawi is the only country in the MADIA sample where agricultural research has been a prominent component of total agricultural assistance for the period 1963-1984 reflects the fact that AID channeled relatively little assistance to this subsector until the late 1970s. In Malawi, a contract for a $9 million agricultural research project with the University of Florida in 1979 exceeded the sums allocated for extension as well as for education and training. This was a basic research project with a farming systems component and it was intended to strengthen the capability of the Ministry of Agriculture's Department of Agricultural Research to develop technical innovations for Malawi's smallholders. The process of designing a follow-on agricultural research project was a good example of a joint effort by the government and two key donors (AID and the World Bank) to build a more effective research and extension system. In 1986, AID approved $14 million for a Malawi Agricultural Research and Extension Project to round out a program that also comprised two World Bank/IDA projects totaling $35.7 million, and a $33.1 million contribution by the Malawian government. The purpose of the AID project is to improve Malawi's institutional capacity to increase the productivity of traditional crops and to identify the most viable crops for diversifying smallholder production. The Ministry of Agriculture was very actively involved throughout the project design process and insisted that the new projects incorporate lessons learned from the previous project.[30]

In Cameroon, an AID-funded National Cereals Research and Extension Project is of considerable interest as a possible "model" for wider use in Sub-Saharan Africa. It was designed mainly to implement research programs for maize, sorghum, millet, and rice, and to create a Testing Liaison Unit to facilitate communication and feedback among researchers, extensionists, and farmers. A mid-term evaluation in 1983 was very favorable.

In recognition of the long gestation period involved in developing an effective national agricultural research system, a ten-year Phase II project in Cameroon was approved by AID in 1984. Under this $39 million project, three additional Technical Liaison Units are to be created. In addition, the Cameroon government is currently negotiating a $46 million project with the World Bank for agricultural research that will cover areas not included in the cereals research project such as research on export crops.[31]

In spite of the formidable difficulties, the current situation is rather encouraging and indicates that AID has learned much from experience. In recent years, AID/Washington has shown increased interest in supporting agricultural research in Sub-Saharan Africa. This interest is reflected in the projects in Malawi and Cameroon where careful design and learning described from earlier experiences have resulted in current projects that are being effectively implemented, that have longer-term, realistic goals, and that show considerable promise.

These projects have been operating only in the past few years making discussions of their success premature. AID's Africa Bureau has produced a new strategy paper for agricultural research that is in many ways exemplary:[32] it incorporates lessons from earlier failures, is well attuned to the needs and capacities of various nations, and provides a coherent plan for implementation.

Extension-Based Production Activities

Over the past twenty-five years, AID has allocated a substantial portion of its funds in Africa for activities intended to affect agricultural production directly. These projects have often been based on "technology transfers" or "innovation aid," and have generally relied on extension workers to transmit information to farmers about specific farming methods or use of inputs that were believed to result in increased productivity and, as a result, higher incomes. During the mid-to late 1970s, more attention was placed on such activities as a result of the New Directions legislation directing AID to focus its attention on the rural poor. In response to the Sahel drought, it was hoped that these kinds of activities would offer a solution to the food shortages of semiarid Africa.

This rubric includes crop-specific production projects, components of integrated rural development projects, livestock projects (discussed separately below), irrigation projects, and rural training activities. The outcome of these efforts from the six countries studied provides a convincingly consistent pattern of projects that were based on presumed or exaggerated assumptions about the benefits and appropriateness of the technological solution, and nearly all of these efforts failed to achieve their objectives. In Africa, more generally, with a few important exceptions—notably cotton research in a number of countries and the development of hybrid maize in Kenya, Zimbabwe, and Zambia—extension programs have had relatively little to offer that was relevant and attractive to smallholders, given the constraints they face. The effectiveness of investments in agricultural extension programs has been limited by deficiencies in the research base for extension.

Examples include two cereals projects in Senegal that set out to increase millet yields 50 percent by promoting fertilizer use, early planting, and other agronomic techniques. In Cameroon, the Small Farm Family Training Centers project was designed in the belief that a year of training in the use of agronomic techniques and animal traction would permit farmers to return to their villages and increase their income by 50 percent. In Nigeria, the Maize and Rice Production project epitomized "technological optimism." The project set out first to devise "improved packages" and to promote their adoption by farmers, with almost no specific information as to what was available or what might be appropriate. In Tanzania, a project was

undertaken that would use the Ministry of Agriculture Training Institutes and establish rural training centers for farmers in the belief that if a sample of farmers was offered short courses, they would not only apply the knowledge *directly* and increase their production and incomes, but would also have an important demonstration effect for their neighbors, thus helping to reduce the need for large extension staffs.

The consistent outcomes of these kinds of activities lead to several conclusions. First, that determining the appropriateness of technologies *ex ante* for the African context is virtually impossible; the direct transfer of technologies to Africa is unlikely to succeed for several reasons. Among them is the fact that agricultural research in much of the world is focused on increasing *yields*—because land is the scarce factor of production. In much of Africa, however, labor, not land, is still the scarce factor of production, and farmers will be unwilling to adopt technologies that consume additional labor in order to raise production per unit of land area.

Second, these types of activities, which are prone to exaggerated assumptions and technological optimism, persist because of one of AID's weaknesses—that is, the inability to enforce realism and objectivity in the analyses of the project papers and evaluations that determine whether such activities are approved or continued.

Livestock

The livestock sector accounted for 5.3 percent of AID's project and program assistance for agriculture, but it is now recognized to be the Agency's least successful subsector. Other donors have had much the same experience. Recently, AID management has suspended efforts in the pastoral livestock subsector.

Most of the AID funding went to a set of rather similar pastoral livestock range management projects. None of these projects, which were carried out in all MADIA countries except Malawi, are considered to have made progress toward their range management, production, or human welfare objectives. While their training components have contributed to human capital formation, their institution building impact has been marginal. It is striking that lessons learned in early projects in Nigeria and Ethiopia were not incorporated into later programs in Kenya and Senegal, though the earlier experience was known to AID design officers.

The differing objectives of African governments, AID, and pastoralists have been one major source of difficulty. Governments tend to view pastoral nomads as a nuisance and would generally prefer that they settle and take up cultivation. Weak government commitment to livestock projects has been manifested in a lack of support for recurrent costs, diversion of equipment, and strained relations between host country officials and AID contractors.

AID's livestock planners have viewed pastoralists as backward and inefficient. With the exception of projects in Niger and Senegal, AID-funded livestock projects have all been based on the direct application of a range management model derived from successful American experience in regulating the use of open range by competitive, commercially oriented livestock producers. This range management model was given theoretical backing by the untested belief that African pastoralists caused serious degradation through overgrazing because their herding practices exemplified "the tragedy of the commons."

This uncritical acceptance of the American range management model in the design of pastoral projects led to almost total neglect of collecting site-specific data on trends in range condition, their relationship to climate cycles and stocking levels, and on current livestock and range management practices. It was simply assumed that degradation was occurring everywhere, and that it would be possible to increase off-take by improving herder practices, altering herd composition, and establishing and enforcing an appropriate carrying capacity for the range.

Input Supply

This subsector ranks next to agricultural education and training in AID expenditures on agriculture, accounting for 6.9 percent of project and program outlays in the six countries. The largest expenditures in this category have been for commodity import programs for fertilizer that are better discussed later in conjunction with nonproject aid, policy reform, and policy dialogue. Other than commodity import programs for fertilizer, the principal expenditures have been for seed multiplication projects in Tanzania and Cameroon.

There is an attractive logic to the proposition that a seed multiplication project is an essential ingredient of a crop improvement program. In the case of hybrid maize, it is true that seed multiplication and distribution are necessary conditions for success because of the rapid decline in yield if hybrid seed is not replaced each year. (The rapid diffusion of hybrids among Kenya's smallholders was dependent on the competent performance of a private company that had previously specialized in producing grass seed for European farmers in the highlands).

A North Cameroon Seed Multiplication Project illustrates many of the problems that make it exceedingly difficult to design and implement a seed multiplication project that will have a favorable cost-benefit ratio. Phase I of the project began in 1975, with a $1.5 million grant to develop a system for producing improved seed for peanuts, maize, sorghum, and millet and distributing the seed to farmers. It could not achieve its goals due to an overextension of resources. A much larger Phase II project, begun in 1982, also suffered from slow implementation, lack of coordination among government agencies, and poor management. Although it did succeed in distributing substantial quantities of seed to farmers, the seed was sold at subsidized prices that were 50 to 100 percent below local market prices. Apart from the problem of economic viability, a more fundamental constraint has been the unrealistic assumption (underlying both phases) that research would be able to develop improved varieties of the four crops promptly.

The seed multiplication project in Tanzania also appears to have been out of sequence because of the limited availability of improved crop varieties. AID assistance began in 1970 and continued until 1982. Although the government strongly supported the project in principle, its financial support declined as economic difficulties mounted. A review in 1982 declared that the project "was in complete disarray."[13] With the benefit of hindsight, it now appears that the project was probably premature, given the indications that it would not be sustainable once AID assistance was withdrawn.

Seed multiplication and distribution is a highly specialized activity, and our conclusions are tentative because of our lack of expertise in this area. However, it seems that

seed specialists have a tendency to assume that a seed multiplication program is an essential component of an agricultural development strategy, with little attention given to the economic returns from investing in that activity as compared to other activities that might merit a higher priority. It therefore seems to us that the AID outlays for seed multiplication in Tanzania and Cameroon were out of proportion to other more fundamental elements of their agricultural development strategies. In particular, those outlays appear to have been large relative to the modest level of investment in agricultural research. This is also another example of the "technological optimism" mentioned earlier; a high social rate of return depends on the availability of varieties to be multiplied that have a substantial yield advantage over local varieties, and the authors have not found convincing evidence that such varieties are available. Cotton and maize may be exceptions to this conclusion, and a new sorghum variety in northern Cameroon seems promising. In addition, both the Cameroon and Tanzania projects were designed to use inappropriately capital-intensive technologies and both suffered from serious management problems.

Planning, Management, and Statistics

This rather mixed category received 3.0 percent of total AID project and program outlays making it fifth in outlays for agriculture and only a little less important than extension. All of the six countries except Malawi had significant projects under this rubric, but there were large differences in the nature and timing of the projects.

In Tanzania, there was considerable support for agricultural analysis and planning activities in the second half of the 1960s and again in the early 1980s.[34] During the earlier period, an Agricultural Production Surveys Project led to the commissioning of studies on agricultural marketing, seed multiplication and distribution, livestock and range management, land consolidation, smallholder tea development, and agricultural education and credit. During the early 1980s, AID's Tanzania Mission again initiated some valuable analysis and planning activities. A special policy unit known as the Office for Policy Analysis was established. But the idea that the government's policies were partially to blame for the country's agricultural problems was controversial, and because of the sensitive nature of these issues, the mission's approach was to undertake analyses, commission studies by consultants, and support the efforts of Tanzanian scholars and organizations.

An alternative approach to strengthening the agricultural management and planning capacity of an African government was taken up by the Kenya Rural Planning project, implemented by the Harvard Institute for International Development (HIID). In addition to the advisory role of the technical assistance team, HIID appears to have contributed to the ability of the Ministry of Agriculture to carry out its budget management responsibilities efficiently due to the introduction of microcomputers.

In Cameroon, a major responsibility of the Agricultural Management and Planning project, initiated in 1978, has been to assist the Agriculture and Planning ministries in conducting an agricultural census for the entire country. The census was carried out in 1984 and received excellent support from national, regional, and local governments. The project was extended to June 1987. Some useful studies have been carried out, and with the establishment of a *Departement des Etudes et Projets* in the Ministry, good progress has been made in institutionalizing a capacity for economic analysis and for the collection, processing, and analysis of statistical data.[35]

An Agricultural Research and Planning Project initiated in Senegal in 1981 has followed an interesting and different approach. Its objectives include the development of Senegalese macroeconomic research capacity in the area of food and agricultural policy, as well as the development of production systems research capacity at the micro-level. Financed by the World Bank and France in addition to AID, the project has a strong participant training component that has included graduate training at U.S. universities and field research on policy-related matters carried out in Senegal with young but very able U.S. collaborators. The studies that have resulted have made a valuable contribution to the ongoing policy dialogue over agricultural issues in Senegal.[36]

While AID's success in this area has been mixed, probably the most glaring deficiency in most African countries is the lack of reasonably accurate statistics on crop areas, yields, and production. Local governments and donors alike are bedeviled by the lack of factual information about agricultural economies of Sub-Saharan Africa. The value of these kinds of projects is difficult to measure but undeniable. Strengthening the ability of African governments to plan and monitor their own agricultural development is essential, and it can be a costly error to base agricultural planning on inaccurate data or poor analysis.

Integrated rural development and area development projects

AID-funded projects of this nature have been relatively unimportant in the MADIA countries, except for Senegal and Tanzania. They have, however, been of major importance in the assistance programs of the World Bank and several other donors. A $24 million Casamance Regional Development Project in Senegal and a $15 million Arusha Regional Planning and Village Development Project in Tanzania were the two main projects of this nature reviewed in the separate country studies. The Tanzania project had some special design features that gave rise to considerable friction between the AID mission and the contractor. Moreover, the general economic decline in Tanzania makes it especially difficult to assess the project's potential contribution to regional development.

In the case of the Casamance project in Senegal, there is now general agreement, resulting from a learning process within the mission as well as from evaluations and audits, that the project was based on overly optimistic assumptions, that it ignored existing services, and failed to take account of structural weaknesses and inappropriate functions of the parastatal organizations it sought to strengthen. There is much to be said for an integrated *perspective* on agricultural and rural development, but the Casamance project seems to provide an additional piece of evidence that the effort to *administratively* integrate a variety of rural development activities in a single project exceeds the administrative capacity of the host country. It also seems clear that AID does not have the institutional capacity to implement effectively projects of that nature.

Nonproject Assistance, Policy Reform, and Policy Dialogue

In many countries of Sub-Saharan Africa, structural reforms to improve the policy environment appear to be virtually a precondition for the success of programs or projects to increase productivity by investments in physical, human, or

social capital. The conceptual framework outlined above includes the important notions of "induced innovation" and "induced institutional change." Arbitrary and discretionary interventions—especially those leading to underpricing of capital and foreign exchange and administrative rationing of those scarce resources to a favored subsector of atypically large and capital-intensive farm units—tend to induce a dualistic pattern of agricultural development. Furthermore, price distortions and poor macroeconomic management, parastatal controls of marketing systems, and overstaffed government agencies result in inefficient use of some of Africa's scarcest resources and inhibit private initiative.

Policy dialogue and structural reform programs have become the focal point of AID's programs in a number of African countries in the 1980s—including four of the six examined here—as attention has shifted away from the basic human needs mandate of the 1970s. In Kenya, owing to strong political interest related to Kenya's permitting U.S. naval vessels to use the port of Mombasa, economic assistance to Kenya has grown considerably, including a $117 million Structural Adjustment Program in 1983, with a $30 million Economic Support Fund grant for the first year of a three-year program. The conditionality of this program was aimed at overcoming structural weaknesses in the Kenyan economy: economic stabilization, reduction of trade barriers, institutional reforms related to budgeting and parastatals, population policy, and liberalization of fertilizer distribution and grain marketing. The initial $30 million grant appears to have contributed significantly to the success of Kenya's macroeconomic stabilization efforts in that year: Kenya's annual inflation rate and budget deficit was cut by about one-half, the effective exchange rate was lowered, the real rate of interest increased, and the current account deficit and foreign borrowing were reduced.[37] In the area of agricultural policy, however, little was achieved in promoting liberalization of fertilizer distribution and the marketing of maize and other staple foods.[38]

Liberalization of fertilizer pricing and distribution has been a common theme of AID policy reform initiatives; they have been initiated to varying degrees in Malawi, Senegal, and Cameroon. In Malawi and Cameroon, this has included a proposed shift to high analysis fertilizer in addition to reduction of fertilizer subsidies. The change poses a difficult challenge for extension staff, however, because of the need to train farmers in the more demanding techniques of applying high analysis fertilizers.

In Senegal, a severe financial and economic crisis left the government little choice but to accept the aid and conditions of the IMF, the World Bank France, and AID. Since the early 1980s, these efforts have resulted in progress toward liberalizing agricultural marketing and pricing, credit restructuring, and reducing government debt.

From the review of AID's involvement in nonproject assistance for policy reform, this chapter draws two conclusions:

First, there is a need to modify AID's approach to policy dialogue. There has been too much emphasis on efforts to use leverage that is really lecturing to government officials with a view to ensuring that the right decisions are made. There is a need for greater emphasis on a policy dialogue *process* that enhances a country's capacity for good policy research and policy analysis to improve decisionmaking by a country's own policymakers. The emphasis on using policy dialogue as a tool to help a country strengthen its own capacity for policy research and analysis underscores the importance of building educational institutions that train people for such tasks. Encouraging the establishment or strengthening of mechanisms for institutionalizing that capacity is equally important. Stronger links need to be forged with government ministries so that policymakers increasingly demand and get relevant information and good analysis. It appears that AID's Agricultural Research and Planning project in Senegal is making a notable contribution to this type of institution-building.[39]

Second, it also needs to be emphasized that policy reform represents a transitional strategy. Once price distortions and other major policy problems are resolved, the gains to be realized from further reforms will be limited, as will the willingness of African countries to adhere to donor's conditionality when major policy problems are resolved and the need for additional balance of payments support is less severely felt.

It will be a pity if the present enthusiasm for policy dialogue and policy reform diverts attention from the continuing need for development as "a generalized process of capital accumulation."

Review of Policies and Constraints on Aid

Among the major donors, AID is unique in the extent to which it has assigned its staff to overseas missions and given them broad programming responsibilities. It is generally believed that this arrangement gives the Agency a comparative advantage in working collaboratively with host country counterparts, in developing strategies well suited to local needs, and in implementing projects. As there is currently pressure to reduce the size of missions for fiscal and security reasons, we have tried to assess the strengths and weaknesses of the system.

Documenting the strengths of AID's mission presence is difficult because many of its achievements are the result of informal contacts, friendship, and patient persuasion that are not featured in official reporting documents. Yet there is clear evidence from our country studies that this informal process, reinforced by seminars, conferences, and visits to the United States or to selected developing nations, has significantly altered host country officials' attitudes toward higher agricultural education, research, health, and population. AID's mission system also allows its field staff a considerable degree of flexibility in marshalling or redeploying resources in response to changing circumstances, unforeseen difficulties, or unexpected opportunities. Indeed, it is not in the mission's interest to reveal the degree of its flexibility to a distant and often hostile Congress, or to a worried Washington bureaucracy.

This review also leads to the conclusion that the effectiveness of AID's African missions in translating general policies and available resources into a development assistance program addressed to the host country's needs and capacities has been constrained by many pressures. Foremost among these is the pressure to obligate appropriated funds in a timely manner. Other significant constraints give rise to pressures to select and package its activities in accordance with the current policy climate in Washington; to comply with ever-increasing, complex, and time-consuming documentation, contracting, and procurement requirements; to fend off or accommodate numerous claims for support from domestic special interest groups; to accommodate the State Department's political and strategic concerns; and to support the political and developmental agenda of host country leaders. In each of the countries, there are clear examples where these pressures (from Washington) led missions to compromise long-term devel-

opment goals in order to respond to such pressures. During the 1970s, for example, the New Directions policy bias led to the elimination of support for agricultural higher education in Tanzania and delayed it several years in Cameroon. For similar reasons major efforts in agricultural research were delayed in Cameroon and Kenya. Combined pressure to obligate funds and to target projects on rural and low income people contributed to poor project design and performance in livestock projects in Kenya, Cameroon, and Senegal, and in other production oriented projects in Senegal (and other Sahelian states). The largest AID project in Senegal, which was based on a number of questionable assumptions and performed poorly, was undertaken to affect rural people directly—and, due to State Department pressure to help the host government, to cope with a separatist movement in the Casamance region.

Mission management is also constrained by the size and skills of its workforce complement. Given the complex, time-consuming, and time-driven nature of AID's programming procedures, it is simply not practical to engage in extensive analysis or in exploring alternative projects in more than cursory fashion. The mission is under more pressure to put together a plausible program and to obligate available funds than to consider the opportunity costs of potential options.

In Africa, the ability of AID missions to develop and maintain effective program strategies also has been constrained by the need to "plan without facts" and by a loss of mission "memory," exacerbated by mission instability. During the 1970s, AID's heavy emphasis on focusing its assistance on projects and on contracting out all but bureaucratic tasks severely limited the staff time and skills that could be devoted to analytical tasks. This change over the past twenty years also appears to have made it very difficult for AID to recruit highly qualified, technically skilled individuals as it is widely recognized that AID staff must devote nearly all their time to administrative tasks.

In addition, in Africa, AID employees form part of an expatriate community with limited local contacts outside the bureaucratic and technocratic urban middle class groups that are often unaware of the perspectives of the farm population. Mission personnel vary in their ability to obtain information from a variety of sources.

These competing and at times conflicting pressures have affected mission strategies in many ways. While there has been a high degree of stability of AID goals and a continuing emphasis on agriculture, food crops, and smallholders throughout the period under review, there has been instability of strategies to achieve these goals and marked discontinuity in project-level support for specific institutions and activities.

Whether AID programs and projects are continued or terminated often seems to be related more closely to pressures from Washington than to project performance or changes in host country conditions. This seems to be a central difficulty in AID's country strategies. The Washington orientation of the country missions frequently leads them to give inadequate attention to host country institutional capacities and political priorities.

Pressures from Washington also have the effect of discouraging missions from coordinating their activities with other donors. Because of the multiplicity of donors operating in African countries, the need for coordination among donors is especially acute—and difficult. In principle, AID's country missions have a comparative advantage in working collaboratively with host country counterparts and in assisting local governments in developing policies and programs well suited to local needs. The constraints summarized above, and some of the factors affecting AID's programming system examined in the next section, have the effect of impairing the ability of AID missions to work collaboratively and constructively with host governments.

Pressures from Washington or the embassy at times vitiate the mutual learning that occurs through discussion with government officials at the operational level. When this happens, high-level host government leaders may be urged to agree to programs that are not clearly understood or desired by planners and technicians in the implementing ministries. This problem is exacerbated by policy change, fluctuation in funding levels, and windows of opportunity created by the unexpected availability of funds in particular functional accounts late in the obligation period.

These problems are stressed here because we believe the AID country missions have the potential to play a very important and constructive role. The fact that the problems are surmountable seems to be demonstrated by the way in which health and population officers in the country missions have been able to work patiently and persistently with host governments and other donors, notably in helping to bring about changes in attitudes hostile to family planning and in collaboratively developing health and population strategies. By focusing on relatively simple measures such as immunization and oral rehydration to improve child survival prospects, the health activities appear to be manageable and complementary to efforts to bring fertility levels into a more manageable balance with drastically reduced mortality levels. In Malawi, and especially in Kenya, there also appears to have been significant progress in working in collaboration with the local government and with the World Bank and other donors in developing plans for strengthening agricultural research, including mechanisms for promoting greater involvement in research on the part of agricultural scientists in university faculties of agriculture.

Effectiveness of AID's Programming System

AID's experience in Sub-Saharan Africa indicates that effective assistance for agricultural and rural development must be based on technical and analytical skills; familiarity with what has worked in the host country; a comparative perspective; and a patient, persistent, flexible, and error-embracing approach. The latter is important because it requires a good deal of experimenting, groping, and mutual learning to adapt Western technology and organizational forms to Africa's unfamiliar, distinctive, and diverse conditions.

Over the past quarter century, AID has contributed greatly to the available pool of appropriate skills by broadening the disciplinary and technical breadth of its work force and by providing long-term support for relevant sectoral and topical investigation and training at universities and other research centers in the United States and Africa. AID has also developed an evaluation system that has produced valuable long-term assessments of AID's experience and impact as well as provided managers with useful information during project implementation. In addition, the Agency has made substantive progress in developing approaches better suited to African social, economic, and agronomic contexts. By contrast, changes within AID have made it more difficult for the Agency to adopt a flexible, error-embracing approach and to fully capitalize on these favorable developments in implementing its programs.

Ironically, AID's organizational structure, procedures, personnel system, and incentives were, in some respects, better suited to its task in the early years than at present. The Agency was more decentralized with greater delegation of authority to the missions. Contracting and procurement procedures were less restrictive. Programming technical assistance was less time-consuming and more flexible, as it required little documentation and was reviewed in Washington by a small, technically oriented staff.

Most personnel were employed under a special authority that enabled AID to hire professionals with special skills on a temporary basis. The lines between AID and contract employees were not clear, and many AID employees worked closely with host country counterparts. In any case, their shorter time horizon encouraged them to innovate, take risks, and to identify with their profession to a degree not characteristic of professional career services.

AID's organization has become far more complex, and the demands on country missions impose an orientation toward Washington rather than a host country and its problems. New structures have been created to show compliance with new objectives, regulations, directives, and oversight from the Congress as well as from AID/Washington. AID's programming, project design, contracting, and procurement requirements have become vastly more detailed, standardized, and time-consuming. More time has to be spent preparing forward-looking advocacy documents to obtain funding. Less time can be devoted to project implementation and evaluation. Resource allocation decisions are still shaped by the entrepreneurial efforts of AID's employees, but increasingly these have been focused on coping with AID's burdensome bureaucratic requirements rather than host country needs.

AID's defensive posture also creates incentives to select or ignore information in project evaluation, and to be wary of bringing independent country or technical experts into decisionmaking processes unless they are known to "understand" AID's needs. The Agency's personnel system has become more bureaucratic, though it remains less hierarchical than that of many other large organizations. Promotions are largely linked to general bureaucratic skills and performance rather than to technical skill or ability to work effectively with host country counterparts. The only clear career ladder is in management. Together, AID's internal work incentives and career pattern tend to frustrate its most able and committed employees, and make it difficult for them to maintain their professional skills.

Attention has been drawn to these institutional problems in order to help account for many of AID's well recognized problems with project design and implementation, program continuity, and maintenance of a balanced focus on the host country's problems and prospects rather than AID's.

Conclusions And Recommendations

The impact of AID's assistance programs examined in this study has been severely limited by distinctive conditions in Africa, by the Agency's lack of a domestic constituency, and by certain organizational and procedural constraints.

All of the countries have extensive areas characterized by harsh physical conditions, and the agroclimatic environments are exceptionally diverse. Their agro-economic systems are locally variable, complex, grounded in unfamiliar social institutions, and often oriented to risk aversion more than to optimizing returns. Moreover, the overwhelming importance of rainfed agriculture and the high cost of investments to expand the irrigated area mean that agricultural research programs face special difficulties in generating innovations adapted to diverse and changing environments. In many areas rainfall is inadequate and unreliable, whereas in other areas it is so heavy that it leads to rapid leaching of soil nutrients. Progressive degradation of soils resulting from shortening of fallow periods and destruction of trees and shrubs is generally associated with a transition from abundance to scarcity of agricultural land—a widespread phenomenon that adds to the challenge confronting agricultural research systems.

At independence, transport systems were poorly developed; education and social services rudimentary; trained manpower scarce; region-specific research, data collection, analysis, and planning capacity virtually nonexistent; and manufacturing very limited; with two or three exceptions, the region's economies were narrowly dependent on the export of primary agricultural products. Few Africans had experience in central government institutions. Attitudes toward professionalism and accountability were weakly institutionalized. Leaders were confronted with arbitrary boundaries, a number of ethnic constituencies, and no precedent for legitimate political activity within the newly created nation-states.

Encouraged by the promise of rapid development, the optimism of foreign development experts, and the unbounded expectations of their constituents, all of the region's countries in greater or lesser degree succumbed to the attractions of centralized economic planning and control, accepted development assistance uncritically, rapidly expanded governmental organizations, parastatals, project authorities, and government payrolls, and established a troublesome pattern of ethnic patronage in order to maintain political balance.[40] Another constraint on the effectiveness of AID programs in all African nations is the fact that Africa has had lower priority than any other region in U.S. foreign policy. This has been reflected in low absolute levels of assistance, a lack of continuity in country focus, program size, and shifts in emphasis between bilateral and regional assistance.

The absence of a clear political constituency for long-term foreign assistance has left AID vulnerable to faddish policy shifts, to pressures from an increasing variety of special interest groups advocating their objectives or seeking contracts, to micro-management by individual congressmen, and to constant, and not necessarily well-informed criticism. Although these problems have affected AID programs in other regions as well, it appears that they have been less constraining elsewhere because in Asia and Latin America programs began earlier, and because host governments, with longer traditions of education and greater administrative capacity, were better able to draw upon AID assistance selectively and hence to incorporate it into their plans. Furthermore, coordinating U.S. aid with assistance from other donors was less difficult because of the dominant role of the United States alone or together with the World Bank.

AID's effectiveness in Africa also has been limited by a lack of consensus on the critical elements of strategies for agricultural development, persistent overoptimism concerning the appropriateness of the technologies and institutions being transferred, and factors that hampered learning from experience. The Agency's organization and procedures and weaknesses in institutional incentives have exacerbated these problems.

Effectiveness of AID's Procedures

The evidence from AID's activities in these six African countries reinforces the importance of focusing on the "critical elements of a well-conceived agricultural development strategy" that will result in a balanced increase in the per capita availability of material and human capital. It is more than coincidence that the activities that were successful and that appear to have contributed to agricultural development are also the ones that fit the analytical framework here and constitute critical elements of a well-conceived development strategy. These include agricultural education and training, rural infrastructure, and the creation of economically useful knowledge through agricultural management and planning activities, including the collection of agricultural statistics. Not only are these all examples of necessary elements of the development process, but they also represent investments in areas of acting in which Africa clearly lags behind compared to developing countries in Asia or Latin America—and therefore, where the returns to those investments are likely to be high. Although many of AID's activities in Africa have not been successful, it should be pointed out that AID has provided the largest shares of its agricultural assistance (13 percent each) to agricultural education and to infrastructure development—the two subsectors that are both essential elements of agricultural development and activities in which AID has shown significant success.

As has been clearly demonstrated in other parts of the world, agricultural research represents an important element of agricultural development. However, because of the long gestation period before results can be expected, and because AID and other donors have neglected agricultural research in Africa until recently, no clear evidence of the impact of these investments is yet apparent.

The success of AID's efforts in Africa is limited by its own institutional procedures and the external constraints brought to bear by Congress and specific interest groups. AID is an agency without a strong supportive constituency, and as a result it has tried to secure support by responding to the desires of a large number of small interest groups, and through its reactions to changes in congressional views.

These pressures are transmitted from Washington to the country missions. Whether AID programs and projects are continued or terminated seems to be related more closely to pressures from Washington such as the "basic needs" orientation of the 1970s, than to project performance or changes in host country conditions. This, rather than AID's inability to sustain an effort over time, seems a central difficulty in AID's country strategies. The Washington orientation of the country missions frequently leads them to give inadequate attention to host country institutional capacities and political priorities.

Recommendations

This study of AID's activities in the six countries and of their degrees of success has enabled the conclusions just summarized to be drawn about what went well and to suggest the reasons and circumstances for those successes. Likewise, the evidence permits a generalization about activities that did not succeed and to identify those circumstances and characteristics responsible for the disappointing results.

One is reluctant, however, to make specific recommendations about what should be done. Due to Africa's diversity, it is impossible to generalize about specific activities that should be promoted in a particular country without intimate knowledge of its policy environment, the strengths of existing institutions, and the nature of its current problems and opportunities. We can, however, underscore the importance of shifting the locus of the missions' attention toward host country needs, working with host country counterparts, and seeking better coordination with other donors. Although some of these modifications are possible now, simplification of AID programming procedures would facilitate these kinds of changes, as would linking further funding to a review of what has been accomplished with obligated funds, rather than to unrealistic promises of what will be done if funds are obtained.

The set of eight priority activities listed earlier are facilitating rather than direct-impact activities. They are aimed at generalized human, social, and physical capital formation. They seek to strengthen the capacity of institutions to address their countries' distinctive needs. They place the locus of planning, coordination, and resource allocation firmly within host country institutions, rather than in AID. They require patient, long-term, flexible support, experimentation, risk taking, and an error-embracing process of learning.

AID's current programming system, implementation procedures, and incentives structures are not well suited to carrying out these activities. But even without organizational or procedural changes, AID's performance in Africa could be improved by avoiding projects that:

—Assume it will be possible to transfer directly existing American technologies and forms of organization to rural African populations;

—Depend on extensive logistic support, the timely procurement of commodities or American-made equipment that cannot be serviced by existing facilities;

—Entail complex management, create new administrative units, or assume it will be easy to alter existing institutional patterns, including those established during the colonial period;

—Require American contractors to live in remote rural areas and work more or less directly with local people; and

—Depend for their functioning on outputs of other planned projects, rely on inputs to be provided by ministries not responsible for the project's implementation, or require substantially better interministerial coordination than already exists.

While these general guidelines also apply to support for rural infrastructure, they can be relaxed, if necessary, because AID's past efforts in this area have been comparatively successful and because of its catalytic, facilitating role. Moreover, rural infrastructure can usefully absorb unanticipated "windfall" funding. For these reasons, it is advisable for AID to have shelf projects in this sector.

Although AID's institution building and participant training have achieved a good deal, their impact could be increased. More support should also be given to the development of institutions *after* initial infusions of technical assistance, training, and construction have been completed. This can be done by providing additional and continuing support for:

—Research by Africans on many aspects of agricultural and rural development including: population, health, natural resource tenure, energy, and environment;

—The maintenance of American equipment for which spare parts and service are not locally available.

—Workshops, publication, travel, networking, and mid-career and in-service training to enable Africans to maintain their professional competence and morale; and

—Policy-relevant, applied research and the interchange of information between political leaders, administrators, and African technical experts to inform government decisions and institutionalize the process of technically informed dissent.

Enabling faculties of agriculture to make a greater contribution to national research programs should be a principal objective of such support. Nonproject assistance should continue to be used to expand successful host country initiatives, and to reduce the costs and risk associated with changing government policies, procedures, organization, and responsibilities.

These recommendations entail a shift in the mission's work, procedures, and needed staffing pattern. Less effort would have to be devoted to designing and managing new and complex projects and to the inevitable problems associated with contracting and procurement. More effort would have to be spent analyzing country needs and working with host country counterparts to understand the best ways to help existing institutions to meet these needs. Shifting the locus of mission attention to supporting existing institutions would encourage better coordination with other donors. The increased effort to make institutions more effective—a need already recognized by AID management—would also help to check the tendency of donor assistance to foster project proliferation and the expansion of government.

Although some of these modifications are possible even now, they would be facilitated by greatly simplifying AID programming procedures, and, with congressional approval, by linking further funding to a review of what has been accomplished with obligated funds rather than to unrealistic promises of what will be done if funds are obtained. Such changes would increase incentives for carrying out better monitoring and evaluation. Adopting a less defensive, more flexible, error-embracing approach would also encourage AID to welcome more participation by non-AID African and U.S. experts and expert bodies such as the National Academy of Science.

Greater reliance on this approach, along with the need to engage in effective, informed, and patient policy dialogue as well as to program nonproject assistance would require greater analytical skills and country knowledge in the mission, but a smaller total personnel complement. The approach would also provide needed incentives for mission staff to update their skills and broaden their understanding of the host country and region. AID would have the incentive to help them do so through short- and long-term training and through the establishment of coherent career ladders

Notes

1. Rutherford M. Poats, *Twenty-five Years of Development Cooperation: A Review* (Paris: OECD, 1985).

2. World Bank, *World Development Report* (New York: Oxford University Press, 1986), p.217.

3. Sub-Saharan Africa and Africa are used interchangeably throughout this chapter.

4. CIP programs have been the most common use of ESF since 1975, although cash/budgetary support has risen since 1983. Project aid has accounted for about 20 percent of Africa's ESF programs since 1980. See Congressional Research Service, U.S. *Aid to Africa: The Record, the Rationales, and the Challenge*, prepared for the Committee on Foreign Affairs, Subcommittee on Africa by R.W. Copson, T.W. Galdi, and L.W. Nowels, January 1986.

5. Congressional Research Service, U.S. *Aid to Africa*, p.xi.

6. Military aid—relevant only for Kenya—is excluded from these figures.

7. A recent report of the Congressional Research Service (1986) provides a convenient summary of AID assistance to Sub-Saharan Africa for the period 1946 to 1985. The following table, in millions of 1985 dollars (rather than 1983 dollars used in this chapter) shows the position of four of the six MADIA countries.

1. Zaire	$1,895	7. *Kenya*	$ 951
2. Sudan	$1,687	8. Somalia	$ 812
3. *Nigeria*	$1,305	9. *Tanzania*	$ 665
4. Ethiopia	$1,298	10. Zambia	$ 537
5. Liberia	$1,181	11. *Senegal*	$ 508
6. Ghana	$1,128		

A breakdown by 5-year periods from 1960–1985 included in the CRS report shows the sharp changes over time in country emphasis.

8. Only those obligations which are clearly attributable to the country in question are represented in the figures and tables. Further discussion of regional accounts is found below.

9. W.K. Jaeger, "U.S. Aid to Nigeria: Its Impact On Agriculture and Rural Development," MADIA Working Paper (Washington, D.C.: World Bank, 1987).

10. For the period 1978–84, extensive use was made of the "Agriculture and Rural Development: Functional Review FY 1978–84" prepared by AID's Africa Bureau to attribute project totals to different subsectors. In the three West African countries—Senegal, Cameroon, and Nigeria—funds for individual projects are divided among several subsectors when they contain different components. These shares are estimated from Project Papers, end-of-project financial data, and are invariant between years. For Kenya, Tanzania, and Malawi, each project was assigned to one subsector.

11. Moses Abramovitz, *Resource and Output Trends in the United States Since 1870*, Occasional Paper 52 (New York: National Bureau of Economics Research, 1956). Simon Kuznets, *Economic Growth of Nations: Total Output and Production Structure* (Cambridge, MA: Harvard University Press, 1971), p.73.

12. Yujiro Hayami and V.W. Ruttan, *Agricultural Development: An International Perspective* (Baltimore: Johns Hopkins University Press, 1985), Chapter 8. B.F. Johnston and Peter Kilby, *Agriculture and Structural Transformation: Economic Strategies in Late-Developing Countries* (New York: Oxford University Press, 1975), Chapters 5–6.

13. H.G. Johnston, "Comparative Cost and Commercial Policy Theory in a Developing World Economy," *The Pakistan Development Review* 4 (1) Supplement, Spring: 1–33, and Johnston et al., "An Assessment of A.I.D. Activities."

14. Johnson, "Comparative Cost and Commercial Policy Theory," p.9.

15. Bruce F. Johnston and William C. Clark, *Redesigning Rural Development: A Strategic Perspective* (Baltimore: Johns Hopkins University Press, 1982), Ch. 4.

16. Definitions of the essential elements of development put forth by A. Krueger, "Aid in the Development Process," *The World Bank Research Observer* 1(1): 57–78 1986, and G.L. Johnson, "Institutional Framework for Agricultural Policy Monitoring and Analysis," prepared for EDI (Washington, D.C.: World Bank, 1986) differ only slightly from the definition presented here. G.L. Johnson refers to the four driving forces of rural development as "technical change, institutional improvements, human development, and growth in the biological and physical capital base" (p.1). Krueger stresses the importance of promoting "accumulation and efficient use of resources, the development of well-functioning markets, efficient governmental provision of infrastructural services, and institutional development in both the private and public sectors" (p.58) in order to achieve development goals.

17. See Johnston et al., "An Assessment of A.I.D. Activities," chapter IV.

18. Hyami and Ruttan, *Agricultural Development*.

19. David C. Wilcock and George R. McDowell, "Building Colleges of Agriculture in Africa: US University Experiences and Implications for Future Projects," Paper for USAID/BIFAD, 1986, p. 7.

20. Jaeger, "U.S. Aid to Nigeria."

21. Jaeger, "U.S. Aid to Nigeria," pp. 42–43.

22. W.K. Gamble et al., "A Review of the Impact of AID Assistance to Three Nigerian Universities" (Morrilton, Arkansas: Winrock International, 1986), p.6.

23. Dijkerman, "An Assessment of A.I.D. Assistance to Tanzania."

24. Dijkerman, "An Assessment of A.I.D. Assistance to Tanzania," p.99.

25. Dijkerman, "An Assessment of A.I.D. Assistance to Kenya," p.169–75.

26. AID, "AFGRAD African Graduate Fellowship Program, Phase III Project Paper No. 698-0455" (Washington, D.C.: AID), p.22.

27. Dijkerman, "An Assessment of A.I.D. Assistance to Kenya," p.84.

28. Dijkerman, "An Assessment of A.I.D. Assistance to Tanzania," p.88–91.

29. Johnston et al., "An Assessment of A.I.D. Activities," chapter 4.

30. Dijkerman, "An Assessment of A.I.D. Assistance to Malawi," pp.72–74.

31. Jaeger, "U.S. Aid to Cameroon," pp. 76–77.

32. AID, "Plan for Supporting Agricultural Research and Faculties of Agriculture in Sub-Saharan Africa," (Washington, D.C.: AID, 1985).

33. Dijkerman, "An Assessment of A.I.D. Assistance to Tanzania," p.44.

34. Dijkerman, "An Assessment of A.I.D. Assistance to Tanzania," p.85–92.

35. Jaeger, "U.S. Aid to Cameroon."

36. Jaeger, "U.S. Aid to Senegal," pp.75–80.

37. Elliot Berg, Walter Hecox, and Jim Mudge, "Evaluation of the AID 1983–84 Structural Adjustment Program in Kenya," draft report commissioned by USAID/K, 1985, p.ii.

38. Berg et al., "Evaluation of the AID Program."

39. Jaeger, "U.S. Aid to Senegal."

40. Political instability, which is often cited as an impediment to economic development in Africa, has not characterized the countries in this study, except in the case of Nigeria. It is worth realling that the growth of government payrolls posed an especially serious problem because, in the name of nondiscrimination, the principle was adopted at the end of the colonial period that African civil servants should receive the same salaries as their European predecessors. The real value of those salaries has not been reduced substantially by inflation that has not been matched by salary increases, but that legacy contributed significantly to the exceptionally large gap between incomes in the "modern sector" and the incomes earned by rural households. And in the 1960s and 1970s donors encouraged the proliferation of parastatals and project authorities.

41. Activities implemented by the Peace Corps and PVOs constitute a partial exception.

Chapter 5

European Community Assistance for Agricultural Development in Cameroon, Senegal, and Tanzania (1960-87)

WALTER KENNES

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Abbreviations

ACP	Af. ica, Caribbean, Pacific
CAT	Coffee Authority of Tanzania
CDC	Cameroon Development Corporation
CEC	Commission of the European Communities
CPSP	Caisse de Péréquation et de Stabilisation des Prix (Senegal)
EC	European Community
ECU	European Currency Unit *
EDF	European Investment Fund
EIB	European Investment Bank
NGO	Nongovernmental Organization
NMC	National Milling Company (Tanzania)
ONCAD	Office National de Coopération et d'Assistance pour le Développement (Senegal)
SAED	Société d'Amenagement et d'Exploitation des Terres du Delta (Senegal)
SEMRY	Société d'Expansion et de Modernisation de la Riziculture de Yagoua (Cameroon)
SOCAPALM	Société Camerounaise de Palmeraies
SODECOTON	Société de Développement du Coton (Cameroon)
SODEFITEX	Société de Développement des Fibres Textiles (Senegal)
SONACOS	Société Nationale de Commercialisation des Oléagineux de Sénégal
SONAR	Société Nationale d'Approvisionnement Rural (Senegal)
TCMB	Tanzania Coffee Marketing Board
TDL	Tanzania Dairies Limited

* Values in the text are generally expressed in European Currency Units (ECU), a basket of European currencies. Up to 1970 the ECU was defined as being equivalent to the US$. From 1971 to 1981, the ECU was strong against the dollar with a peak of ECU 1.0 = US$ 1.4 in 1980. Between 1981 and 1986 the ECU weakened down to ECU 1.0 = US$ 0.81, but the situation reversed in 1987. In July 1988 ECU 1.0 = US$ 1.15. *In the text,* MECU *refers to million* ECUs.

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Introduction

This chapter reviews agricultural cooperation of the European Community (EC) with Cameroon, Senegal, and Tanzania. In Cameroon and Senegal, this cooperation dates back to 1960, the time of independence, whereas in the case of Tanzania it effectively started in 1975.

The *historical origin* of EC development cooperation is a provision in the Treaty of Rome, which founded the Community in 1957. This foresaw Community involvement in trade matters and infrastructure investment, in the regions and territories that were at that time colonies of the founding member states. The financing of these investments was done through a fund set up for that purpose, which became the first European Development Fund (EDF). Following independence, starting in 1964, a series of 5-year agreements—or conventions—dealing mainly with trade and aid were concluded between the Community and a group of sovereign African states. With the entry of the United Kingdom in the Community in 1973, many Commonwealth countries joined the agreement. Presently, sixty-six African, Caribbean, and Pacific (ACP) countries have signed the third Lome Convention (1986-90). Each convention has a corresponding EDF "replenishment." The sixth EDF is linked to the third Lome Convention. Outside the ACP group, the Community also has cooperation arrangements with countries in Latin America, Asia, and North Africa.

The *constituency* for EC cooperation is broader and more complex than the one for bilateral aid programs because it comprises diverse interests from the twelve Community member states. As a result, EC cooperation has generally been free from the biases, based on historical links, that sometimes characterize bilateral programs. The EC philosophy and approach toward development cooperation emanates from a continuous dialogue between the group of ACP states and European Institutions and member states. The member states are actively involved in all decisionmaking procedures. The part of total development assistance of member states that is handled by the Community has been steadily rising and is currently around 12 percent. In recent years, payments have been above 1,600 MECU. The European Parliament has been consistently in favor of increasing Community development assistance.

It should be noted that agricultural cooperation in this chapter is interpreted broadly—so as to take into account rural development. Nevertheless, actions that are rural, but predominantly nonagricultural (e.g., schools, hospitals, water supply, road infrastructure) are not included in the review. Food aid is included, because it relates to agriculture in at least two ways: it affects the supply of food, and its counterpart funds can be used to stimulate rural development. The system for the stabilization of agricultural export earnings (STABEX) is also dealt with.

Overview of EC Cooperation with Cameroon, Senegal, and Tanzania

Background on EC Funding

Cameroon, Senegal, and Tanzania are members of the group of sixty-six African, Caribbean, and Pacific (ACP) countries that signed the third Lome Convention. The financing is provided through the sixth European Development Fund (EDF) that covers the period 1986-90. The EDF is managed by the Commission of the European Communities (CEC), except for some components that are handled by the European Investment Bank (EIB).

EDF resources can be subdivided into "programmed" and "nonprogrammed" aid. The package of *programmed aid* allocated to a country is determined at the beginning of each convention and consists mainly of grants and a smaller quantity of special loans (with more than 80 percent grant element). The allocation is determined largely on the basis of population and per capita GDP and also takes into account landlockedness or insularity and the level of past EDF assistance. At the beginning of each five-year convention, the broad allocation of programmed resources is determined through a negotiation between the ACP State and the EC. The result is an *indicative* (country) *program* that constitutes the first stage of the EDF decision cycle. Subsequently, specific programs and projects are appraised, decided, and implemented.

Nonprogrammed aid is not allocated in advance to specific countries. Countries may benefit from it, depending on circumstances. An important type of nonprogrammed aid is STABEX, which serves to compensate for downward fluctuations in earnings from exports of agricultural products to the EC. A comparable system exists to cover mineral exports (SYSMIN). Another type of nonprogrammed aid is *risk capital* that is used to acquire temporary minority holdings in companies and is managed by the EIB. Nonprogrammed aid also includes *emergency assistance* to help countries cope with natural disasters or exceptional circumstances of a similar nature.

Outside the EDF, but within the convention framework, there are *"normal" loans provided by the* EIB. These loans are at market conditions, but they are usually softened by interest subsidies from the EDF. Apart from the resources linked to the conventions, there is also grant aid financed on the annual budget. The most important form is *food aid*, followed by cofinancing provided to *nongovernmental organizations*.

Composition and Evolution of Overall Aid Commitments

A summary of EC aid to Cameroon, Senegal, and Tanzania is provided in Table 1. When the figures are converted to constant 1983 purchasing power, and further into US$, one obtains cumulative aid flows to Senegal and Cameroon above US$ 1 billion. For Tanzania, the 1983 constant value is above US$ 500 million. The table also shows that normal EIB loans have been particularly important to Cameroon; that aid to Tanzania has been almost totally in the form of grants; that Senegal has received high STABEX transfers.

Not represented in Table 1 are the *regional projects*. These involved more than one country and have generally focused

Table 1
Overall aid commitments[a] (MECU)

	EDF 1 1958-65	EDF 2 1966-70	EDF 3 1971-75	EDF 4 1976-80	EDF 5 1981-85	EDF 6 1986-90
Cameroon						
Programmed Aid						
(allocation)	(51.3)	(53.9)	(58.8)	(55.3)	(69.0)	96.0)
grants	51.3	39.4	49.9	32.8	29.7	27.8
special loans	—	14.5	8.9	20.8	17.9	—
subtotal	51.3	53.9	58.8	53.6	47.6	27.8
Nonprogrammed aid						
interest subsidies	—	—	0.5	4.2	20.9	—
risk capital	—	—	0.5	5.0	—	—
exceptional aid	—	—	—	2.3	1.6	0.2
STABEX	—	—	—	4.1	29.6	—
subtotal	—	—	1.0	15.6	51.2	0.2
Total EDF commitments	51.3	53.9	59.8	69.2	99.7	28.0
Budget Commitments[b]	—	—	0.5	2.7	1.8	1.1
EIB loans	—	11.3	6.0	32.6	95.7	—
Total	51.3	65.2	66.3	104.5	197.2	29.1
Senegal						
Programmed Aid						
(allocation)	(42.9)	(67.4)	(57.1)	(59.0)	(69.0)	(97.0)
grants	42.9	61.5	52.8	39.4	38.3	87.0
special loans	—	5.9	4.3	19.3	20.1	10.0
subtotal	42.9	67.4	57.1	58.7	58.4	97.0
Nonprogrammed aid						
interest subsidies	—	—	—	1.8	5.6	—
risk capital	—	—	0.8	7.4	4.2	25.5
exceptional aid	—	—	9.2	4.6	2.1	0.9
STABEX	—	—	—	65.1	90.6	82.1
subtotal	—	—	10.0	78.9	102.5	108.5
Total EDF commitments	42.9	67.4	67.1	137.6	160.9	205.5
Budget Commitments[b]	—	—	14.3	14.9	28.5	2.5
EIB loans	—	2.4	1.4	12.0	21.0	—
Total	42.9	69.8	82.8	164.5	210.4	208.0
Tanzania						
Programmed Aid						
(allocation)	—	—	—	(103.4)	(120.7)	(169.0)
grants	—	—	—	70.3	109.2	103.6
special loans	—	—	—	32.9	11.6	—
subtotal	—	—	—	103.2	120.8	103.6
Nonprogrammed aid						
interest subsidies	—	—	—	0.1	—	—
risk capital	—	—	—	7.8	9.7	—
exceptional aid	—	—	—	0.3	0.5	18.0
STABEX	—	—	—	20.7	20.9	8.9
subtotal	—	—	—	28.9	31.1	24.9
Total EDF commitments	—	—	—	132.1	151.5	130.5
Budget Commitments[b]	—	—	7.5	14.1	43.2	7.2
EIB loans	—	—	—	5.0	—	—
Total	—	—		151.2	194.8	137.9

[a] The figures reflect financing decisions up to *31 December 1987* and are expressed in current prices.
[b] Food aid, NGO cofinance, and special programs.

on transport links with landlocked countries. In the case of Senegal, funds were also provided for the dams on the Senegal River (55 MECU). Other regional finance covered training facilities, agricultural research, and, particularly, animal disease control.

Procurement for EDF projects is mainly done by international competitive tendering open to all ACP and EC member states, assuring a wide degree of competition. The third Lome Convention contains provisions to favor contracts in ACP states. Their share in the total value of EDF contracts has increased from almost 15 percent in the 1960s to approximately 30 percent by 1984. Around 2 percent goes to third countries not belonging to the EC nor the ACP group.

Sectoral Composition

Table 2 shows that up to the third EDF (1971-75) project funding was concentrated on *physical infrastructure*. In Cameroon, this included roads, port facilities, and railways (the EC financed a major part of the Trans-Cameroonian Railway). In Senegal, trunk roads and bridges accounted for the bulk of physical infrastructure (the EC financed 25 percent of the trunk road network). *Agricultural and rural development*, broadly defined so as to include processing, rural roads, rural health centers, irrigation facilities, and agricultural schools, has been the second most important funding sector up to the third EDF. More recently, especially for the fifth EDF (1981-85), this sector was the most important, covering about 50 percent of project funds in Cameroon and Senegal, as well as Tanzania. *Social Infrastructure*, mainly in the form of school and hospital buildings, constituted the third most important sector.

There have been drastic shifts over time in the shares of different subsectors within *agricultural and rural development* (see Table 3). The most striking shift in Senegal and Cameroon has been from export crop production and processing toward food crop production. Livestock, fisheries, and forestry have on the whole absorbed a relatively small part of EDF aid. An exception is livestock in Senegal, which accounted for 25 percent of agricultural aid under the fourth EDF. It is noteworthy that the fifth EDF (1981-85) maintained a larger share for export crops within total agriculture for Tanzania than for either Senegal or Cameroon.

The importance of *technical assistance* for agricultural and rural development cooperation in Senegal and Cameroon has fluctuated between 10-15 percent, up to the fourth EDF (1976-80). In all three countries, however, the fifth EDF (1981-85) has a very high share of technical assistance (almost 20 percent). This is a result of the shift toward *food* crops, which require more extensive preparation and much closer follow-up.

The *factors explaining the sectoral breakdown* of EDF funding and its evolution over time are diverse and often reflect specific country priorities. However, in a more general way, they also reflect the changes in development thinking. In the 1960s, the lack of basic infrastructure was seen as the major constraint on economic growth. Another major growth constraint was the lack of human resources—which justified EDF investment in educational and health facilities. At the same time, export crops were seen as the only expandable sources of foreign exchange and government revenue.

The 1972-74 world food crisis had a strong influence on the allocation of funding. In many African countries (e.g., Senegal) food imports had been rising rapidly and were absorbing a large share of export revenue. The high prices and volatility of food prices on the world market provided important justifications to move aid funds toward food crops. Furthermore, fluctuations and in some cases downward trends in the prices of major export commodities discouraged further development finance for these crops. The shift is clearly applicable to EDF funding in Cameroon and Senegal.

A list of specific projects in the area of agricultural and rural development is provided in Annex Tables 1 to 5. For clarity and brevity these Tables do not include the large number of small actions (e.g., studies or small technical assistance projects). For the fourth and fifth EDF (Annex Tables 3 to 5) the values are given for two stages: amount decided ("primary" commitments); and amount paid or disbursed. Projects that are examined in detail in section 3 are starred in Annex Tables 1 to 5.

Table 2
Sectoral allocation of EDF aid[a] (percentages)

	EDF 1 1958-65	EDF 2 1966-70	EDF 3 1971-75	EDF 4 1976-80	EDF 5 1981-85
Cameroon					
Agriculture and Rural Development	11.5	28.8	29.1	43.9	51.6
Transport Infrastructure	66.3	48.2	48.8	31.5	32.6
Social Infrastructure	18.9	14.5	15.4	6.3	4.6
Industry (nonagricultural)	0.0	3.0	0.0	9.7	6.9
Other	3.3	5.6	6.7	8.6	4.3
TOTAL	100.0	100.0	100.0	100.0	100.0
Total Value (MECU)	51.3	53.9	59.8	65.1	69.6
Senegal					
Agriculture and Rural Development	21.7	78.5	55.7	36.4	52.6
Transport Infrastructure	51.7	8.0	31.4	20.1	7.3
Social Infrastructure	25.6	10.2	2.2	23.6	16.1
Industry (nonagricultural)	0.0	0.0	1.6	13.4	12.3
Other	0.9	3.3	8.9	6.5	11.6
TOTAL	100.0	100.0	100.0	100.0	100.0
Total Value (MECU)	42.9	67.4	67.1	72.5	68.2
Tanzania					
Agriculture and Rural Development				44.2	51.4
Transport Infrastructure				36.8	22.1
Social Infrastructure				5.7	17.8
Industry (nonagricultural)				12.2	7.6
Other				1.1	1.1
TOTAL				100.0	100.0
Total Value (MECU)				110.8	119.5

[a] Situation *30 September 1986, excluding STABEX transfers.*

Table 3
EDF aid for agricultural and rural development[a] (percentages)

	EDF 1 1958-65	EDF 2 1966-70	EDF 3 1971-75	EDF 4 1976-80	EDF 5 1981-85
Cameroon					
TOTAL	100.0	100.0	100.0	100.0	100.0
Total Value (MECU)	5.9	15.5	17.4	28.6	35.8
Subsistence Crops	0.0	0.0	6.0	26.3	25.8
Export Crops	0.0	78.9	47.4	28.6	10.5
Crop Processing	0.0	14.2	33.0	11.5	11.8
Livestock	14.2	0.0	0.0	3.1	4.8
Fisheries	0.0	0.0	0.0	0.0	5.6
Forestry and Conservation	12.2	0.0	0.6	2.9	2.0
Physical Infrastructure	25.4	0.0	12.1	3.9	27.0
Social Infrastructure	8.1	0.0	0.0	17.6	4.3
Other	40.1	6.9	0.9	6.1	8.2
Senegal					
TOTAL	100.0	100.0	100.0	100.0	100.0
Total Value (MECU)	9.3	52.9	37.4	26.4	35.9
Subsistence Crops	10.2	6.9	42.0	30.9	41.8
Export Crops	0.0	81.5	27.6	26.8	9.0
Crop Processing	0.0	1.4	2.6	3.0	0.0
Livestock	0.0	1.4	18.3	25.8	4.6
Fisheries	8.2	0.0	0.0	0.0	5.1
Forestry and Conservation	0.0	0.8	0.0	0.0	6.7
Physical Infrastructure	30.6	0.0	8.0	0.9	27.7
Social Infrastructure	42.4	0.0	0.7	8.9	2.5
Other	8.6	8.0	0.8	3.7	2.7
Tanzania					
TOTAL				100.0	100.0
Total Value (MECU)				49.0	61.4
Subsistence Crops				8.2	18.4
Export Crops				23.6	36.6
Crop Processing				64.1	13.5
Livestock				0.0	15.3
Fisheries				0.0	0.0
Forestry and Conservation				0.0	1.7
Physical Infrastructure				3.8	4.1
Social Infrastructure				0.0	6.6
Other				0.4	3.8

[a] As of *30 September 1986.*

Direct Support for Agricultural Development

This section contains an overview of direct support for agricultural development in contrast to STABEX and food aid that affect the agricultural sector more indirectly. Only projects that are in one way or another representative of the EC cooperation effort are included. Especially in Cameroon and Senegal, each with a history of more than twenty-five years of agricultural cooperation with the EC—but even in the case of Tanzania, it was necessary to leave out discussion of several important actions.

The discussion is subdivided into four major areas of support: export or cash crop production, irrigated crop development (mainly rice), integrated rural development, and small-scale projects. Each subsection briefly describes the background of a representative project (or 'program"), summarizes the main project activities, and provides an assessment including observations on the impact and viability.

Export Crop Production

Groundnuts in Senegal. At the beginning of the 1960s, groundnuts dominated the agricultural economy of Senegal, accounting for more than 80 percent of commodity exports and approximately 40 percent of government revenue. Groundnut processing was the main industrial activity. More than 75 percent of farmers' cash income depended on groundnuts. The bulk of groundnut exports were granted access to the French market at prices above world market levels. With France a member of the European Community, Senegal was going to lose its privileged groundnut products export market. It was clear that any strategy to promote economic growth in Senegal would have to pay attention to the groundnut sector. At the same time, without substantial cost reduction, Senegalese groundnut exports would not be competitive and would lose their share in world exports.

These considerations led the EC to finance a comprehen-

sive five-year groundnut program which was approved in 1965. Subsequently, other actions in support of the groundnut sector were approved. Overall, almost 60 million ECU (nominal value) were spent to support the groundnut sector. The bulk of disbursement took place between 1966 and 1975. The program had two basic components: *structural support* of the supply side and *export price support*. Around 55 percent was earmarked for the structural components designed to reduce production cost.

The elements of the structural component were: extension, improved implements, fertilizer distribution, better seed, storage infrastructure, animal traction, and soil conservation measures. Credit for inputs and implements were channeled through the cooperative system. The price support amounted to an export subsidy scheme compensating Senegal for the gradual reduction of French import prices to the world market level. It was designed to be phased out by the fifth year, when the structural improvements would have their effect on production. Actual disbursements under the program deviated from original intentions: less was spent on structural improvements, and export subsidies were not phased out after five years. Both components were extended beyond the period foreseen.

The difficulties that had to be faced during execution of the program were partly economic (world price movements), climatic (drought), and institutional (inefficiency of parastatals). The 1970-71 season was exceptionally bad due to drought. The marketed surplus declined drastically, and in several producing areas, no seed was available. This led to a separate project to set up a seed service. This project was quite successful, and the marketed surplus recovered quickly.

In the wake of the 1970 drought, the EC approved emergency support for the groundnut sector; this not only was designed to combat the effects of drought, but also attempted to improve the policy and institutional environment. The specific government measures to which the program was linked were spelled out in detail. These measures were negotiated through a "*policy dialogue*" and included a rescheduling of the cooperative debts and an increase of the producer price. At the time, this approach was an innovation. After 1975, the EDF did not continue direct support for groundnut oil production as attention shifted toward food crops. However, indirect price support was continued through the export revenue stabilization scheme (see STABEX discussion below).

Complementary to EDF funding, the European Investment Bank (EIB) provided a loan (3 MECU) to SONACOS to modernize and extend groundnut processing capacity in the Casamance region. An interest subsidy associated with that loan was granted using resources of the fourth EDF.

As part of the effort to diversify Senegalese agriculture, the EC also supported *confectionary groundnuts*. Other diversification actions included cotton (cf. infra) and horticulture. In the early 1970s, demand for confectionary groundnuts was growing rapidly, especially in Europe, and substantial export gains were expected. Projections were to increase the area from less than 3,000 hectares in 1968 to around 70,000 hectares in 1978. The projects were "integrated," providing support from seed and extension to processing and packaging.

It is important to mention that the 1965 groundnut program as well as the subsequent emergency and exceptional support were closely coordinated with French bilateral cooperation. Mainly French organizations were involved in implementation. The technical package introduced by the program was well accepted; however, for a variety of reasons--including the inefficiency of parastatals involved with marketing—it was not possible to reach the targets. The infrastructural and input distribution targets were generally reached, but yields did not improve, partly due to adverse weather conditions. Most important, between 1965 and 1969 the income of groundnut farmers declined by 25 percent despite the substantial price and structural support.

A factor that strongly affected the results of the groundnut program was the increasing competition of soybean oil, which is only a byproduct of soybean cake, and which led to a decrease of Senegal's export prices. Although export of groundnut cake was rising, it could not compensate for the losses on oil revenue. Groundnut cake exports were hampered by the presence of a toxic substance, "aphlatoxine," linked to a fungus. The EC contributed to research on aphlatoxine, and the problem is now generally under control.

In sum, even though the targets of the groundnut program were not reached, by compensating for the effects of drought and world price decline, the EC projects probably prevented a complete collapse of the groundnut sector. Such a collapse would have created massive unemployment not only in the rural areas, but also in related processing and transport activities. In Nigeria, groundnut production did collapse, but there, petroleum revenue enabled labor absorption (at least during the 1970s). For Senegal, another benefit of the maintenance of the groundnut sector was nutrition. Because of the continued availability of groundnuts, a reasonable supply of vegetable oil has always been assured, even to poor households. Many developing countries have to spend scarce foreign exchange on imports of vegetable oil.

The introduction of confectionary groundnuts was initially very successful, with a high participation of farmers. The acreage target of 70,000 hectares in 1978 was met. Given that holdings range from 1 to 2 hectares, some 50,000 smallholders were reached. Production growth was less satisfactory, due to several drought years. Furthermore, it was not possible to organize efficient processing. Since 1980, there has been little further expansion of the confectionary groundnuts. Nevertheless, the crop is established and continues to generate some export revenue.

Cotton in Senegal. After experiments carried out in the early 1960s by French researchers, the EC decided to support the introduction of cotton as part of the effort to diversify Senegalese agriculture. Cotton cultivation had been successfully introduced in neighboring Mali, but Senegal had no tradition of cotton production. The projects to introduce and support cotton had to start from scratch and to provide an integrated package from extension and input delivery to processing and export. Cotton is a labor intensive and delicate crop, so that the quality of support must be good in order to avoid failure. The EC financed two-thirds of the cost of the government's cotton program (approximately 17 MECU)—the balance being provided directly from Senegalese resources.

The program started in 1966, initially covering Sine Saloum and Casamance and later also Eastern Senegal. Up to 1974, responsibility for the operations was entrusted to the Compagnie Francaise pour le Développement des Textiles (CFDT). Starting in 1974, the Senegalese parastatal SODEFITEX took control. In addition to diversification of

exports, the cotton action had two further objectives: to provide raw material for the domestic textiles industry and to contribute to regionally balanced development.

The introduction and adoption of cotton cultivation developed well up to 1976, when the area reached 45,000 hectares, involving more than 70,000 farm households. Fiber production reached 17,000 tonnes, of which 80 percent was exported. The rapid development was the result of a well organized extension effort that was tightly supervised by CFDT. Development was facilitated by the favorable cotton/groundnut price ratio during the first half of the 1970s. Cotton prices were also more stable than groundnut prices. After 1976, production and area declined due to a variety of causes: low yields due to drought, the spread of cultivation to less suitable areas, difficulties in sustaining the comprehensive extension effort, difficulties in maintaining quality levels, and depressed world market prices. During the 1980s, some recovery took place, so that the area under cotton stabilized at almost 40,000 hectares.

Following the world food crisis of 1972-74, there was a shift in attention from export crops toward food crops. Even the fourth EDF project, in fact, was no longer solely a cotton project, but rather a project to develop the cotton areas in Eastern Senegal, with a focus on rice production

One can conclude that cotton cultivation made a modest, but nevertheless sustainable, contribution to the diversification of Senegalese exports. Between 1982 and 1986, export value averaged US$ 17 million against US$ 104 million for groundnut products, and US$ 117 million for fisheries products. Because cotton is labor intensive, employment creation has been important: it has meant about 60,000 jobs. The crop rotations with cotton, cereals, and groundnuts that were propagated by the fourth EDF project have proven to be agronomically sound and economically interesting—provided that rainfall is adequate. Finally, SODEFITEX has emerged as one of the better-managed parastatals involved in food and agriculture.

Palm oil in Cameroon. During the 1960s, Cameroon's exports were dominated by coffee and cocoa, but traditional palm oil production remained widespread in the South of the country. The yields, however, were very low, and the rewards for the hard work of collecting and processing the fruits were equally low. To diversify the economy and to ensure the availability of a basic food item at a reasonable price, the government decided to modernize the palm oil sector, mainly by creating large estates and processing facilities. Since the mid-1960s, several donors, including the World Bank, France, and the EC have supported oil palm development in Cameroon. Total EC finances for oil palm amounted to around 40 MECU, using different types of funding: grants, special loans, risk capital, and normal EIB loans in combination with EDF interest subsidies. All projects were located in the southwest of the country. The main objectives of EC support for palm oil were to: satisfy growing urban demand for oils and fats; contribute to export earnings; increase rural revenue by introducing high yielding oil palms and improved processing techniques; and contribute to the profitability of the enterprises engaged in palm oil production and processing.

Two-thirds of EC support went to the Dibombari agro-industrial complex managed by SOCAPALM and one-third was allocated to the Cameroon Development Corporation (CDC), both being parastatals. In collaboration with CDC, 4,300 hectares of oil palm plantation were established between 1967 and 1977. CDC also obtained a loan for a processing factory that went into operation in 1972. With a World Bank loan the capacity was doubled afterwards. More recently, the original factory was modernized, and the building of a second factory was financed by an EIB loan in combination with an EDF interest subsidy. The work was completed by early 1986.

CDC was established before independence in the part of Cameroon that was administered by Great Britain. When that part of Cameroon joined the federation in 1962, CDC became ineligible for financial support by the Commonwealth Development Corporation. CDC also faced adjustment problems because of decreased profitability of banana cultivation. EC support for palm oil came at a critical moment to support CDC's diversification policy. Both plantation and processing components were implemented more or less according to schedule. Oil palm has definitely made positive contributions to overall CDC results. In contrast, other CDC activities have been much less successful (e.g., tea, which also received EC support).

EC assistance for the *Dibombari complex* consisted of: a high yielding oil palm plantation (target 6,000 hectares), an outgrower's scheme (target 800 hectares), a processing factory, and village feeder roads. Establishment of the plantation took place from 1974 to 1977—according to schedule. The outgrower scheme was started in 1977 and completed in 1982. With 1,200 hectares, the acreage target was exceeded by 50 percent. The number of growers that participated (400) was much higher than foreseen. The first stage of the Dibombari oil mill was put in operation in 1979 and the second stage was completed by the end of 1984. Actual cost of the oil mill was below what was budgeted, and no major problems were encountered.

According to an evaluation carried out at the end of 1984 (SOTESA/SHAWEL 1985), the palm oil operations, financed by the EC, have in many respects been successful. With 11,000 hectares established, they account for more than 20 percent of the present acreage in Cameroon. The physical targets (plantation and infrastructure) that were foreseen were usually attained and sometimes surpassed.

The palm oil operations have effectively contributed toward fulfilling the country's requirements for edible oils. The increase in export revenue has been modest, especially because the government has given priority to supplying the domestic market. Employment creation in a densely populated area has been significant: 1,350 workers are employed in the Dibombari complex. The outgrowers' scheme has improved the livelihood of smallholders in the project area. It also encouraged them to reduce their reliance on shifting cultivation and thus helped to slow down the process of deforestation and ecological degradation. However, the scheme is of too recent origin to judge whether there is any lasting positive environmental impact.

There have also been several weaknesses and problems. The Dibombari plantation has experienced a very high turnover of labor. The plantation work is seen as an intermediate stage between work in the village and in the town (Douala). The SOCAPALM deserves credit for coping rather well with this problem. Contrary to the success of the outgrowers' scheme in terms of planting, the maintenance of the plots has suffered at times from neglect. The above referenced evaluation study therefore recommended strengthening the extension services. There have also been problems related to the land tenure system. It has been difficult to establish equitable compensation to the local communities for the plantation land. The replacement of

outgrowers that for one reason or another discontinued their participation has been difficult, also due to land tenure problems. A more thorough socioeconomic analysis of the project area might have diminished these problems, but would also have delayed implementation.

On the whole, the positive contributions outweigh the problems so far. However, the long-term viability of the oil plantations depend mainly on the relative price of palm oil vs. other edible oils. At present (1987) the palm oil price is at a record low level, squeezing the cash flow of CDC and SOCAPALM and discouraging the outgrowers. In other words, the future is uncertain.

Coffee in Tanzania. Under the first Lome Convention, it was agreed in 1977 to provide 12.7 MECU for a four-year Coffee Improvement Programme (CIP), for which Tanzania would also contribute the equivalent of 12 MECU, to be raised by a levy on coffee growers. The Programme was designed to raise production from the smallholder coffee growers—by upgrading the extension services. The main component of both the EDF and local contribution, accounting for two-thirds of the total, was the supply of chemicals (pesticides), as well as mechanical inputs and equipment; the remaining one-third of the EDF financing covered vehicles for the extension services, feeder road improvement, the rehabilitation of coffee pulperies, the construction of a number of stores, and technical assistance.

The CIP was expected to enable increased extension service coverage (target of 1 extension worker per 300 hectares, or 600-800 growers), thereby leading to a gradual improvement in yields—so that by the end of the project, yields would be 30-50 percent higher, depending on the region, than the rather low levels (240-350 kilograms of coffee per hectare) then applying. A total production increase of 23,000 tonnes of coffee was projected by the 1981/82 season. The organization was centered on the Coffee Marketing Board, subsequently to become the Coffee Authority of Tanzania (CAT), which in 1977 took over all the duties of the disbanded Cooperative Unions, including input delivery, extension services, and crop collection.

In 1982, under the second Lome Convention, a two-year Coffee Development Programme (CDP) was approved to strengthen the coffee sector in areas where performance in the earlier Coffee Improvement Programme (CIP) had been poor—and also to establish a more effective institutional framework for implementation. Among the major changes was the increase in technical assistance personnel from 3 to an average of 12, in order to cover local management/technician shortages. Whereas the CIP had simply provided a temporary injection of resources, the CDP emphasized much more the strengthening of all the critical aspects of the coffee sector's operations, including research, the training of extension officers, input delivery, the repair of CAT vehicles, and the rehabilitation of the Bukop processing factory. EDF contribution per year was more than twice that during CIP (6.75 MECU vs. 3.15 MECU). To increase effectiveness, a number of special conditions—for example, on coffee pricing and project accounting—were also negotiated.

Following an evaluation of CDP, it was agreed in 1984 that EDF support would be continued for another two years (to the amount of 9.5 MECU), but with certain changes that can be summarized as follows:

—Imported inputs no longer included chemicals, but were concentrated on the purchase of mechanical inputs (notably hand pulpers for improving on-farm processing and hence coffee quality), and on equipment for smallholders, and for the first time an allocation also was included for equipment and spares to be sold to *estates*—both nationalized and private. The total allocation for inputs accounted for about one-half of the funds;

—The technical assistance personnel was further increased—to 14 per year—and accounted for about one-third of the costs;

—More emphasis was given to research and training, with less for transport, and with no construction component;

—The government agreed to discuss with CEC any proposed changes in the institutional arrangements affecting the coffee industry and to ensure that CAT would have access to sufficient foreign exchange to obtain inputs.

Any assessment of EC support for coffee must take into account that producer prices for coffee in Tanzania were at historically high levels in 1976/77, and that they fell in real terms by around 50 percent during the following five years. Given this price trend, and the fact that Tanzania's general economic situation deteriorated rapidly from 1979 onward, with severe foreign exchange shortages and the curtailment of many basic imports (fuel, fertilizers, and pesticides), the coffee sector faced an increasingly hostile general economic environment.

It must also be noted that from 1960 to 1976, smallholder production appeared to be on a long-term upward trend, with erratic fluctuations from year to year and between regions. By 1970, however, production from the estates, most of which had been nationalized in the late 1960s and early 1970s, had started to decline. For the three years, 1983/84 to 1985/86, average annual smallholder production is estimated at 47,600 tonnes—7 percent higher than in 1975/76 to 1977/78, but 12 percent lower than in 1980/81 to 1982/83. Even allowing for the long gestation period of an extension-oriented project and some direct sales by producers of the North and West in neighboring countries, it is clear that production has not increased much since the program began. There is a difference in regional performance, suggesting that the actions have been more successful in the South than in the North and the West. However, the production rise in the South mainly reflects increased acreage (up 85 percent from 1977 to 1985, but not promoted under the EDF programs) and the absence of alternative cash crops. Yield, the main target variable of the programs, does not appear to have improved much.

The success with which any program is carried out inevitably depends to an important extent on the effectiveness of the institutional framework. The Coffee Authority of Tanzania (CAT)—a parastatal under the responsibility of the Ministry of Agriculture—was the nominated executing agency. Established only in 1977, following the dissolution of the Cooperative Unions, CAT was a "new" organization at the beginning of the CIP, yet it was responsible for the management of the entire coffee sector, including input supply, extension services, crop collection, processing, and marketing. Total staff in 1980 was around 1,500—mostly employed in extension work, and in buying posts/procurement offices throughout the widely dispersed coffee-growing regions. The management and financial control of this major new operation clearly presented enormous problems, given Tanzania's limited manpower resources.

As a parastatal, CAT was by no means autonomous: coffee

pricing decisions, for example, were taken by interministerial committees. The drawing up of CAT's annual plans and budgets was closely supervised by the Ministry of Agriculture. Clearly, given the complexity and coverage of the programs, the management and control of the operations posed a considerable administrative and communication problem. Several major policy/management problems were more or less permanently present, e.g., the system of access to foreign exchange for CAT, the reform of the producer payment system (to include greater quality differentiation), and the reform of the producer levy system for recovering input costs.

In 1985, confusion and difficulties were arising from the policy of reintroducing cooperatives, which involved a total restructuring of the coffee sector, but was not discussed with CEC as explicitly requested in the special conditions of the CDP financing agreement. The changes have meant the dissolution of CAT and the distribution of its former functions to three institutions: the cooperatives for input supply and distribution, the Ministry of Agriculture for extension services, and the Tanzanian Coffee Marketing Board (TCMB) for transport, processing, and marketing. Many program-trained extension workers have been dismissed or transferred outside coffee areas. Confusion continued in 1986 and 1987, particularly on the distribution of responsibilities between the cooperatives and TCMB.

An evaluation study (BDPA 1986) concluded that the conception of the programs on a national scale, covering all smallholders, was too ambitious given the large area to be covered, the huge distances between these areas, their different agricultural characteristics, and the weak administrative and technical capacity of the Tanzanian coffee sector. Nor was the average annual EDF contribution of 4 MECU sufficient for the task of sustaining such a nationwide operation. (The palm oil and cotton operations in Cameroon and Senegal were in comparison much more focused.) These weaknesses have been amplified by an uncertain policy and institutional environment. Since 1986, however, there are signs of greater consistency and decisiveness, i.e., devaluations, sharp rises in coffee producer prices.

In summary, there is little evidence of a clear, positive impact on yields, but considering the unfavorable overall circumstances and the increased relative attractions to many farmers of food crops for sale on unofficial local markets, the fact that smallholder coffee output has on average been above preprogram levels can be considered a modest success, that can probably be attributed largely to the delivery of crucial inputs. In this context, it also should be noted that the production of most other export crops declined sharply during the same period.

Irrigated Crop Development

Irrigated Rice in Senegal. Even before independence, Senegal was importing significant quantities of rice—first from Southeast Asia (Indochina) and later from Mali (Niger scheme). Rice imports steadily increased from around 100,000 tonnes in the early 1960s to more than 300,000 tonnes in the early 1980s. Especially at times when world rice prices were high (e.g., 1974/75 and 1980/81), these imports constituted a heavy burden on the balance of payments. From 1981 to 1983, the single product of rice accounted for 10 percent of Senegal's commodity imports. Quite naturally, rice has been, for a long time already, a target for import substitution.

Upland rice is traditionally produced in the Casamance area. However, yields there are low, and virtually all the rice is used for subsistence. Already in the 1960s, the EC supported this type of rice cultivation, but the results were disappointing. Marketed surplus could hardly be raised. Labor availability turned out to be one of the main constraints.

The most important potential for irrigated rice production, in association with other crops, lies in the Senegal River Valley. More than 250,000 hectares are suitable for fully controlled irrigation, making it possible to produce more than one million tonnes of rice—an amount that largely exceeds import requirements. Up to now, however, despite sizable investments involving several donors, only a small fraction of the potential has been realized.

Three main operations that have been financed by the EC are: the Nianga plain scheme, a large-scale development; the village irrigation perimeters around the Senegal River near Podor; and the intensive rice production project in Eastern Senegal, which is a continuation of the development of the cotton growing areas.

The background study on the *Nianga scheme* was done already in 1968. The proposal to embank 9,000 hectares and to create 2,000 hectares of paddy fields under controlled flooding was approved in 1972. Shortly thereafter, however, it was decided to introduce fully controlled irrigation with double cropping on a reduced area of 750 hectares. The EDF finance of almost 6 MECU included the embankments, the pump station, the leveling of the land, and technical assistance. The complete management of the scheme (input supply, mechanization, marketing) has been carried out by the parastatal SAED. Inputs are provided on credit, and the cost is recovered through sales by the farmers to SAED. The main objective for the Nianga scheme was to have 600 farmers producing 5,000 tonnes of paddy per year.

Following the Sahelian drought of the early 1970s, a number of small *village irrigation perimeters* (VIPs) of 20-50 hectares have been constructed along the Senegal River. The main objective of these schemes was to strengthen food security at village level. The EDF finance of about 8 MECU covered 2,500 hectares of which 900 hectares was part of the micro-projects program (see below). For the micro-projects, the EDF financed equipment, material, and technical assistance; and SAED carried out the development work with an important contribution by the farmers themselves (mainly labor). For the other part (1,600 hectares), EDF finance also included the land development work and training.

The concept of a VIP is that the water is pumped from the river with a small diesel pump and distributed through earthen canals with simple concrete division structures. Rice is grown in the rainy season mainly for subsistence; in the dry season, tomatoes, onions, and other vegetables are grown as cash crops. The area per farm household is 0.25 hectares, but sometimes households can benefit from more than one scheme. As with the large scheme, services and inputs are provided on a credit basis by SAED, but in this case management is left to the farmers.

It was mentioned above that the fourth EDF *cotton area project* also included rice production using the village irrigated perimeter approach. The latter project target was to develop 750 hectares for double cropping of rice. The fifth EDF project (4.7 MECU) for rice production in Eastern Senegal was designed to consolidate and extend the cotton area development project. The project became more

"integrated"—including animal traction development, village repair, and implement production workshops, as well as a literacy and health program. Again the farmers contributed by providing labor SODEFITEX was responsible for the development and management of the scheme.

In 1985, a sectoral evaluation study of EC-financed irrigation projects was carried out by the Dutch Institute for Land Reclamation and Improvement (ILRI). The study covered projects in Senegal, Cameroon, Niger, Ethiopia, Burundi, and Madagascar. The rest of this section draws heavily on this study. As far as rice *production* is concerned the results of the Nianga scheme are satisfactory, even though the initial targets have not been reached. A net irrigated area of 630 hectares was available from 1977—i.e., within three years—and production reached 3,500 tonnes of paddy. Each farm household was allocated approximately one hectare of fully irrigated land. The *financial results* for the farmers have been quite favorable. However, this has only been possible through large subsidies on the cost of inputs and irrigation services (up to 60 percent). Furthermore, the farmers have not participated in the initial investment cost, nor in the administrative overhead of SAED. The viability of the scheme, therefore, appears doubtful.

The progress of the village irrigated perimeters near the Senegal River has been satisfactory with regard to area, cropping intensity, and yields obtained (4.8 tonnes/hectare paddy and 15 to 20 tonnes/hectare tomatoes). The farmers generally have been very motivated to participate, as crop growing in the irrigation scheme is financially very attractive for them. Nevertheless, for the irrigation parastatal SAED—and even for the VIP—there is still a sizable recurrent cost deficit, estimated at around 235 ECU/hectare in 1985.

Because the village irrigation perimeters are of recent origin, it is not yet possible to make a reliable judgment on their long-term viability. Much will depend on the evolution of the paddy price, on the flexibility with respect to crop rotations, on the possibilities to integrate some livestock activities in the farming system, and on reducing the losses of SAED or on making the schemes independent of SAED by allocating more tasks to the farmers. Experience up to now with the village schemes on the Senegal River is on the whole satisfactory.

In contrast, the results of the small irrigation schemes in Eastern Senegal have been disappointing. Area development has been far below target. The slow progress has been partly due to the lack of interest of the farmers and in some cases resistance to execute their part of the work. This situation is much in contrast to the motivation of farmers in the Senegal River Valley. The cropping intensities on the reclaimed areas also have been below target, but the paddy yields obtained were satisfactory. As there were no big constraints of a technical nature or of water availability, the reasons for the poor results in Eastern Senegal have to be sought in other factors—e.g., the fact that the perimeters are often located far from the villages. More important, according to the evaluation, the farmers had clearly indicated a preference for rainfed agriculture while through the scheme SODEFITEX had been strongly promoting rice production. The climate in the region generally permits achievement of modest, but acceptable yields of cotton, sorghum, millet, and groundnuts, so that farmers did not feel obliged to introduce radical changes in their way of life.

It was referred to above that the project had become "integrated," with irrigation not the sole objective. Results for the other project components have been mixed. The literacy program and the introduction of animal traction have developed satisfactorily, but the production of farm implements has been difficult because of the lack of raw materials and because the prevalence of barter trade made it difficult for blacksmiths to establish themselves. Results for the health component have also been less positive than anticipated.

The description of irrigated rice production in Senegal illustrates that a favorable social environment (i.e., motivation and participation of the farmers—as in the VIPs) and a demonstrated technical potential for rice cultivation (cf. yields obtained) are important and necessary, but by no means sufficient conditions for a viable operation. For long-term viability, it must be possible to pay for real production costs and for maintenance of the investment without subsidizing input prices—unless there are important non-economic objectives that can be financed from external resources.

Irrigated rice production on the Nianga perimeter started in 1975—that is, at a time when world rice prices had risen by more than 400 percent over three years. Senegalese imports of rice were growing rapidly at exorbitant cost. Most of the EDF Village Irrigation Perimeters became productive during 1981-84, when drought in the Sahel very drastically cut production levels of rainfed crops, particularly millet and sorghum, ensuring instant success. However, already in 1985, and even more in 1986, weather in the Sahel was more favorable for rainfed crops and also for livestock raising. At the same time, world rice prices declined drastically.

As a result of these developments, the policy problem in relation to rice production in Senegal has been formidable: at a time when the government tries to reduce the deficit of the parastatals by charging the full cost of inputs and maintenance to the farmers, the price of rice imports has declined. The issue is whether to continue to subsidize rice cultivation either *explicitly*, as in the past, or *implicitly*, by raising the tariffs on rice imports to reduce the costs or to encourage alternative crops or activities. The issue is further complicated by the fact that Senegal can import very cheap broken rice, which fits the consumption patterns well. In considering protection at the national level against cheap rice imports, the interests of around 2.5 million urban dwellers must be weighed against the interests of about 0.5 million people in the Senegal River area. Ecological issues must also be taken into account: irrigated production will on the whole put less pressure on the physical environment than extensive cropping and grazing, and thus preserve future resources. Regardless of how the government will cope with the policy problem at the national level, it is clear that the village schemes have better prospects than the large schemes—because their costs are lower, and since they can be more readily integrated with other farm activities.

Irrigated rice in Cameroon. Investment in irrigated rice production in Northern Cameroon started about 1970, after a long period of study and experimentation. Northern Cameroon belongs to the Sahelian climatic zone, with a long dry season (November to June) and a short wet season characterized by highly variable rainfall (400-600 mm). The region's border with Chad is formed by the Chari River and its tributary, the Logone, which drain part of southern Chad and the Central African Republic into Lake Chad, and provide opportunities for irrigation. In 1971, SEMRY was founded as an autonomous public corporation, supervised

by the Ministry of Agriculture, to manage the planned irrigation schemes. SEMRY I, comprising about 5,000 hectares, was established between 1972 and 1977; SEMRY II with 6,000 hectares was installed between 1978 and 1982. The bulk of the external finance for SEMRY I and II was provided by the World Bank and France.

The success of SEMRY I, the drought in the Sahel, and the record high prices of rice on the world market around 1975 provided strong arguments in favor of SEMRY III—and in 1978 the EC approved a first phase, costing 4.7 MECU. SEMRY III is located in the Logone and Chari district, which is the most northerly district of Cameroon. Phase I was executed from 1979 to 1982. An interim phase was financed on a STABEX special-project grant of 1.1 MECU and implemented in 1983. By the end of 1983, approximately 800 hectares of irrigated land was available, together with the necessary infrastructure, including a rice mill. Financing for the second phase of SEMRY III (amounting to 9 MECU) was approved in 1984. By the end of 1987, about 70 percent of these funds were disbursed, and the total irrigated area was about 1,800 hectares. This area is not continuous, but spread in 5 perimeters along the Logone and Chari over a distance of more than 100 kilometers. This characteristic has increased the cost of project follow-up. The fact that refugees from Chad have temporarily resided in the project area (1984) has not significantly delayed the progress of the project.

The specific objectives of the SEMRY III operations were:

—Reducing the risk of famine in the Extreme North of the country;

—Increasing the income of the peasant population in the district (by selling the marketed surplus of rice);

—Improving the regional balance in the province; and

—Contributing to national availability of rice.

These objectives are not only economic; to a large extent, they are also social (improving food security and regional balance). This is important for *ex post* evaluation of the resuts.

All together, the EC has provided 15 MECU in support of irrigated rice production in the Logone and Chari district. For Lome III, the district has been chosen as one of the concentration areas, and the government has requested further EC support for consolidating and extending the SEMRY III operations. However, the circumstances in 1987 were quite different from those prevailing at the time of appraisal for phase I (1975) or phase II (1984). Better rainfall in 1986 and 1987 resulted in considerably higher availability of traditional crops and lower demand for rice. Moreover, changes in international markets are reflected in the availability of very cheap import rice. These circumstances make it difficut to formulate an economically viable extension of SEMRY III (see below).

The SEMRY approach as it developed during the 1970s is characterized by double cropping, complete water control, and detailed management supervision. SEMRY is responsible for mechanized land preparation, central nurseries, and the provision of inputs and irrigation water. Farmers are allocated individual plots (0.5 hectares for SEMRY I and II, 0.25 hectares for SEMRY III). Each season they build small dykes around their plots and carry out all crop operations from transplanting to harvesting. A specific share of the paddy crop is sold at a guaranteed price to SEMRY. The cost of inputs advanced by SEMRY is then recovered. After processing the paddy into rice, SEMRY sells it on the national market.

Thanks to good farmer motivation, yields for SEMRY III have been very high, reaching up to 10 tonnes of paddy over two seasons. The cropping intensity for the rainy season has generally been above 80 percent. For the dry season, it has fluctuated between 20 and 70 percent. The original one-quarter hectare per family has been increased to one-third—so that 5,000 farm families, or almost 20 percent of the district's population, benefit from the scheme. The project clearly has improved food security in the district.

From a technical and management point of view, the three SEMRY irrigation schemes undoubtedly are successful. In 1985/86, they produced more than 100,000 tonnes of paddy, accounting for 90 percent of Cameroon's production. The rice equivalent of the paddy significantly exceeds average rice imports over the past five years (around 30,000 tonnes, 1981-85). It looks as if Cameroon could easily become self-sufficient in rice. However, beneath the surface, it is not so clear whether this would be desirable.

In the past, the Upper North of Cameroon could export rice to Nigeria. Recently, these export possibilities were drastically reduced because of better harvests and import restrictions in Nigeria. Transport of SEMRY rice to the main Cameroon consumption centers, Douala and Yaounde, is an expensive and difficult undertaking because of the long distance and bad transport conditions. At present, the CIF Douala price of imported rice is extremely low. Furthermore, better rainfall in the Sahelian region since 1985 has increased the availability of traditional staple foods, particularly sorghum and millet. As a result, SEMRY farmers need to keep less rice for subsistence, and they obtain a low price for what they try to sell on open markets. Thus a blessing for the region leads to drawbacks for the irrigation projects.

Finally, SEMRY is facing a shortage of rice milling capacity so that large quantities of paddy must be stored (around 100,000 tonnes beginning in 1987), and the quality of rice is going down (large share of brokens), making marketing even more difficult.

The above problems have led to increasingly high losses (around 1 MECU for the 1986/87 season for SEMRY III)—a situation that is certainly not sustainable. Especially in view of a possible extension of SEMRY III, it is worthwhile to digress briefly on measures/actions that could be undertaken to alleviate these problems.

At the *local level*, some of the problems could be diminished by:

—Extending the milling and storage capacity;

—Restricting rice production to the wet season, when variable production cost is lowest (however, average fixed cost will increase);

—Diversifying the cropping pattern (perhaps vegetables for export);

—Diminishing the farm gate price (farm income would not go down because revenue from nonirrigated crops and livestock is higher);

—Allocating more of the tasks to the farmers to reduce costs (e.g., using animal traction for land preparation); and

—Introducing cheaper technology (this appears to be difficult for the expensive element of pumping).

At the *national level*, most of the measures that can be considered imply some form of protection of the rice market—by tariffs, quota, or as is already done by "twinning" (imposing traders to buy locally at production cost a

certain quantity of rice for each ton that is imported). Clearly, protection measures imply a loss of welfare for rice consumers in urban areas and a danger of fostering inefficient production if world market prices recover.

Finally, noneconomic questions should also be considered when dealing with the rice issue in Cameroon. It was stated above that the SEMRY III also had social objectives: protecting the population from famine and redressing regional income inequality. Other noneconomic objectives could be preserving the environment or preventing people from migrating by providing a livelihood. To the extent that a country is willing to pursue such objectives it should also be willing to pay the cost in reduced economic benefits in other regions or for other population groups. Such choices are hard to make.

Integrated Rural Development Projects

Northeast Benoue: Cameroon. Already in the 1960s, certain districts in the Upper North province of Cameroon had very high population densities, in excess of 100 people—sometimes even above 200 people—per square kilometer. In a semiarid environment dominated by subsistence agriculture, such densities imply a high vulnerability to famine. In contrast, the northeastern part of the Benoue district, because of its relative isolation, was underpopulated—with less than 5 people per square kilometer, and since the 1950s, there had been some spontaneous migration toward the region. To improve the regional population balance, the Cameroonian government decided to encourage and support this migration.

The integrated rural development project in the northeastern part of the Benoue district has been carried out over three phases, starting in 1973. Two-thirds of the financing, or 25 MECU, was provided by the EC. External contributions also included French and NGO participation (mainly for the health component). Complementary food aid for arriving migrants has been provided by WFP.

The main objective of the project has been to help the migrants settle and earn a living in a new environment. The project includes:

- —Basic economic infrastructure (bridges, access roads, village water supply);
- —Social infrastructure (schools, dispensaries, village pharmacies);
- —Intensification of food production (animal traction, improved seed, inputs);
- —Extension for cash crops, particularly cotton (carried out by SODECOTON);
- —Support for farm associations; and
- —Reforestation.

Throughout phases I and II (1973-78 and 1979-82, respectively) the project area was 6,700 square kilometers. With the third phase (1983-86) the area was increased to 11,000 square kilometers. During that phase, a separate project was started to support fisheries on the 700 square kilometers Lagdo Lake that was formed after completion of a dam on the Benoue River (financed by China) in 1981. All three phases, as well as the fisheries project, have been characterized by a sizable technical assistance input. In 1983, the project staff consisted of sixteen expatriates, including ten from the participating NGOs, plus eleven Cameroonian staff. The fisheries project has another three expatriate staff.

Organized migration into the project area between 1973 and 1986 has totaled approximately 42,000 persons. To that amount should be added spontaneous migration, estimated at 34,000 persons. Taking into account the effect of natural growth, the population of the extended area went up from 70,000 in 1972 to almost 170,000 by the end of 1986. In recent years, spontaneous migration has reached very high levels (probably 7,000 in 1986—partly as a result of drought conditions in exit areas) making it necessary to stop support for organized migration. It is estimated that the agricultural potential of the region would allow a further population increase of 150,000-200,000 persons.

The main physical targets of the project have been achieved without great delays. The social components of the project, particularly schooling and medical care, are generally considered a success, thanks mainly to the important input of NGO volunteers. Agricultural production targets were exceeded for cotton, due to the good extension effort of SODECOTON. However, production targets for food crops were not reached; nevertheless, food availability has kept pace with population growth.

The fish catch on the Lagdo Lake greatly exceeds expectations based on experience in other African countries. Production went up from 2,500 tonnes in 1983 to an estimated 10,000 tonnes for 1986. This production contributes significantly to the animal protein availability in the Northern province (of which Benoue district is a part) and to the livelihood of approximately 2,500 fishermen and their families. It is expected that maximum sustainable production will be reached in 1988. It is clear that the growth of fisheries production cannot be attributed solely to the presence of the project—since it started only in 1985. However, the project can have an important impact on the economically and environmentally sustainable exploitation of this natural resource.

The Benoue project also faced a number of difficulties. Migration and resettlement is a socially and economically delicate process, and there are many examples of complete failure. There has been resistance to letting people leave the densely populated areas, and there have been land tenure problems in the destination area.

Nevertheless, one can conclude that, despite limited success so far with food production, the good results with some cash crops and fisheries—and above all the extensive social and economic infrastructure that has been put in place and maintained—imply that the project is supporting a viable operation.

Iringa: Tanzania. In 1972, to strengthen the development of the regions, the Government of Tanzania introduced measures to decentralize administration toward them. Donors were invited to provide assistance at the regional level through integrated rural development projects. The first project of this type was implemented by the World Bank in Kigoma region starting in 1974. Others were carried out by West Germany (Tanga), USAID (Arusha), United Kingdom (Lindi/Mtwara), and Japan (Kilimanjaro). Iringa region was "allocated" to the EC. The Iringa region agricultural development project (IRADEP) was carried out in two phases: the first, financed under Lome I, covered 1977-81, and the second, financed under Lome II, covered 1982-86.

Iringa region is part of the Southern Highlands and covers an area of almost 60,000 square kilometers with a population estimated at 1.3 million (1987). Access to the region from Dar Es Salaam is easy because of the TANZAM highway and the TAZARA railroad. Within the region, however, access to particular districts is problematic due to insufficient infrastructure and maintenance. Agriculture is dominated by approximately 200,000 smallholders growing

mainly maize, sorghum, and beans. Cultivated area per farm is between one and three hectares. Export crops include tobacco, pyrethrum, and tea. Currently only 7 percent of the total land area is cultivated while an estimated 25-30 percent is of good fertility. Thus the potential to expand production is considerable.

The financing agreement of 6.6 MECU for phase I was signed in 1977. No Tanzanian counterpart funding was foreseen. The main components were technical assistance (25 percent) and infrastructure (45 percent, stores, workshops, pyrethrum driers, feeder roads). Smaller provisions were for extension, oxen equipment, fertilizer, seeds, insecticide, water supply, dairy cattle, and reforestation.

Execution of the project was seriously hampered by delays in the arrival of equipment and by frequent changes in counterpart staff. Nevertheless, by mid-1981 most of the physical targets had been reached. However, an evaluation report of phase I (Vink 1982) concluded that the project's impact on farming in the region was very limited. The overemphasis of physical targets had prevented the technical assistance from establishing adequate working relations with local government agencies and farmers. The program to increase the use of oxen with 5,000 pairs of oxen trained to plow the land, was well received, but due to lack of complementary equipment, its impact on production was small. Most important, the profitability of the production mix (especially sunflower and pyrethrum) that was extended declined, and turned out to be so low that farmers were unable to refund inputs on credit obtained. Revolving funds could not be established. Oxen training centers, dip tanks, and dairy units also faced management problems.

Despite the difficulties encountered in phase I, the major objective—to increase agricultural production and living standards for smallholders in a region with considerable potential —certainly was consistent with Tanzanian as well as EC priorities. A second phase was agreed upon in 1982, again for four years. The phase II project was, on the whole, more realistic as compared to phase I. Its targets were less ambitious, and the level of financial commitments was more significant (21.3 MECU as compared with 6.6 MECU). As regards project components, there were two important additions: more attention for livestock development (dipping and veterinary services, and dairy production) and inclusion of a small-scale irrigation component (fifteen village systems).

Another important change from phase I to II was the extension of project activities from seven concentration zones (approximately 15,000 square kilometers) to the whole region (60,000 square kilometers). This was an explicit Tanzanian demand to maintain an overall balance among the districts, but it meant that the project's resources, especially the input and implement components, had to be spread too thinly for any visible effect. Phase II, unlike phase I, contained a government contribution (1.1 MECU) that was to be financed from food aid counterpart funds and a contribution from the Tanzania Pyrethrum Board (0.9 MECU).

The first two years of phase II continued the focus on physical targets that had characterized phase I. Some of the more important achievements were:

—Improvement of the regional road network by upgrading and maintaining feeder roads, including the construction of twenty-eight bridges;
—Construction of another twelve village warehouses (in addition to the twenty-eight of phase I), that responded to a clearly expressed need;
—Rehabilitation and construction of eighty-eight dip tanks;
—Establishment of four oxen training centers.

During phase II, availability of complementary implements and inputs for the farm support program was better organized than during phase I.

Midway through phase II (1984), following an internal review and with approval of the government as well as the EC, an important realignment of activities took place. These changes occurred against the background of the government's *new agricultural policy*. The realignment was centered along three axes:

—Concentration of extension and land use planning activities on eleven agro-ecological zones (introduction of "safe land use" in those zones);
—Preparation of a detailed regional development plan, based on a regional resources survey; and
—Phasing out of the general farm support program.

The planning exercise was not foreseen originally and was effectively a different sort of project. It was added because of the need for more baseline and monitoring data. However, it came too late to be useful for the project itself, and it diverted attention from regular activities. The reconcentration on specific zones was in reaction to the difficulties of carrying out a large set of activities over a vast region; it was a return to the phase I approach, meant to increase the project's impact and visibility.

Project activities were effectively closed down by mid-1986. Around that time, an *ex post* evaluation study was carried out by SEDES (1986). The latter study criticized the project for lack of design, for insufficient monitoring provisions, and most strongly for the fact that it was set up and managed as a separate institution, with only limited linkage to the regional development authorities and farmers. The planning exercise carried out toward the end was considered to be done in a hurried "top down" way without enough local involvement. Some of the physical results were judged successful: the warehouses, the road improvements, and the village nurseries for reforestation (some of which were installed by NGO projects).

In view of similar problems encountered with other regions of Tanzania, the above criticisms appear to be somewhat exaggerated. Any assessment should also take into account:

—Macroeconomic deterioration throughout most of the project period;
—Frequent institutional changes (villagization, communal production, redefinition of the role of crop parastatals and cooperatives);
—A policy environment that discouraged marketed production through official channels and reduced the profitability of export crops; and
—The complexity and diversity of the project components and the limited resources in relation to the tasks, especially when the project area was extended in phase II.

It is rather doubtful that better project design and planning could have offset the negative effects of the above factors. Nevertheless, more clearly circumscribed objectives (e.g., concentrating on the dominant staple food, maize) might have produced more sustainable results despite all the difficulties of the Tanzanian institutional and economic context.

Small-Scale Projects

"Micro" project programs. To respond in a practical way to the needs of local communities, Lome I introduced financing of micro projects. These are normally carried out in rural areas and must be undertaken at the initiative, and with active participation, of the local community.

Micro projects have to be grouped into programs that are submitted for approval to the EC. Financing decisions on individual projects are then taken by the ACP state in agreement with CEC through a simple procedure. In view of the success of this form of assistance, which was experimental under Lome I, its scope has been enlarged under Lome II and III. As from Lome II, there is no limit on the overall amount (within programmable resources) that a country may spend on micro projects. It is merely specified that the combined contribution of the ACP state and the local community must be at least equal to the amount requested from the EDF. The ceiling for the latter amount has been increased from 75,000 ECU (Lome I) to 150,000 ECU (Lome II), and 250,000 ECU (Lome III).

Of the three countries under consideration, Senegal has made most use of the micro project facility. A first program for *Senegal*, amounting to 0.3 MECU, was approved under Lome I, and was used for a variety of small-scale activities: vegetable growing, provision of agricultural equipment to young farmers, livestock vaccination, and village water supply. Under Lome II, five subsequent programs have been implemented for a total value of 3.7 MECU. There has been great variation in the type and size of the actions financed—ranging from a delivery of irrigation equipment (14,000 ECU) to the rehabilitation of banana production in the Casamance region (820,000 ECU). A large part (440,000 ECU from the second program and almost 600,000 ECU from the fourth) was allocated as complementary finance for the Village Irrigation Perimeters near Podor on the Senegal River (see above).

In the case of *Tanzania*, two micro projects programs were implemented under Lome II, amounting to 1.5 MECU. Unlike in Senegal, the government has nominated a single executing agency: Community Development Trust Fund (CDTF), that is supervised by the prime minister's office. Technical assistance (one expatriate) was provided to help CDTF manage the programs. Altogether more than one hundred projects have been financed under the two programs. The average EC contribution has been around 15,000 ECU. The most important actions financed concern village water supply, livestock development, grain processing, and equipment for an agricultural school. In some cases, projects were cofinanced from food aid counterpart funds.

In *Cameroon* micro projects were used only on a limited scale, with three relatively small programs amounting together to 0.7 MECU. They focused mainly on rural roads and village water supply, agricultural production, and food storage.

Because of the wide geographic and sectoral dispersion of micro projects it is hardly possible to describe results and judge their viability. Some evaluation studies, dealing with a sample of projects, were carried out, particularly for Lome I on Cameroon (Franco and Monkam 1980) and Senegal (Lecomte and Peeters 1980). In fact, these studies were specifically addressed to comparing micro projects with NGO projects. There are large differences among micro projects both within and across countries making it difficult to reach firm conclusions. Nevertheless the experience in Cameroon, Senegal, and Tanzania supports a few general observations:

—There are good arguments to use micro projects to complement other activities, as this reduces the cost of follow-up and management (cf. the success of the Village Irrigated Perimeters in Senegal);

—It is desirable to concentrate micro projects geographically; and

—Supervision of micro projects is greatly facilitated when a specific agency nominated is made responsible for the program's management; such an agency can then be supported with small-scale technical assistance (cf. the arrangement with the Community Development Trust Fund in Tanzania).

NGO Projects. In recent years, nongovernmental organizations (NGOs) have had a growing role in EC development cooperation. This role is concretized in four types of action:

—Food aid (mainly project and emergency food aid),

—Emergency aid (except food),

—Refugee aid, and

—Small-scale development projects.

Recently, EC aid disbursement through NGOs totaled around 140 MECU per year. This section only deals with development projects. Since 1976, the annual Community budget foresees an allocation for the cofinancing of projects with NGOs. The allocation has steadily increased—from 2.5 MECU in 1976 to 62 MECU for 1987. More than 500 European-based NGOs are involved in these activities. On average, the EC contribution is 40 percent of the project cost.

For the period 1976-1986 some cumulative data are as follows:

	EC financial support (MECU)	Number of projects	ECU per project
Cameroon	3.7	76	49,000
Senegal	5.3	92	58,000
Tanzania	5.8	115	50,000

The NGO cofinanced projects have focused on the provision of social and economic infrastructure for local communities in rural areas.

NGO projects have been similar in content to micro projects. Both rely on the direct participation of local communities. One may wonder what, then are the differences, or whether there are areas where NGO projects have a comparative advantage over micro projects, or vice versa. The above referenced studies provide some elements of comparison:

—Micro projects tend to be less import-intensive and less subject to western technology bias;

—Micro projects have more direct involvement of the population;

—NGO projects virtually always have an expatriate input;

—NGO projects tend to be better organized and technically more efficient, but also more expensive;

—NGO projects generally have a training component;

—NGO projects are often more innovative (socially as well as technically), but sometimes experimental; and

—Because NGO projects are cofinanced there is a "multiplier effect" on the use of EC aid funds (currently this multiplier is 2.5).

Both NGO projects and micro projects constitute a useful complement to "normal" projects, mainly because they

focus on direct improvements of the living conditions of local communities and because they rely on their involvement. From the point of view of managing development resources, the small scale and dispersion of such projects can be a disadvantage. This points to the importance of grouping small-scale projects by focusing on certain themes or types of intervention that are relatively easy to supervise and manage. Furthermore, there is scope for linking the two types of small-scale projects.

FOOD AID

EC food aid started toward the end of the 1960s and increased considerably around the time of the world food crisis (1972-74), when the EC became the second most important food donor after the United States. Since 1975, food aid accounts for around one-quarter of total EC aid disbursements. Its budgetary value is expressed at world market prices and is not influenced by internal EC price setting—the difference being charged to the agricultural budget. In recent years the value of EC food aid has been in excess of 500 million ECU.

Neither Senegal nor Tanzania have been among the big food aid recipients. Nevertheless, the cumulative value of EC food aid is important: more than 50 MECU for Senegal and more than 60 MECU for Tanzania, counting only direct aid, i.e., food aid allocated to governments (approximately 75 percent of the total). Indirect aid is handled by international or nongovernmental organizations and is generally for projects or emergency cases. The rest of this section deals with EC food aid for Senegal and Tanzania. Both countries illustrate how food aid has gradually been adapted in a variety of ways from an instrument of surplus disposal to a resource for development that complements other resources and contributes to food security. Cameroon, apart from some shipments via NGOs and an emergency allocation to cope with drought in the Upper North in 1971, did not receive significant amounts of food aid. Indirectly, Cameroon was involved through deliveries for Chad that were bought from SEMRY in 1985.

Food Aid to Senegal

Senegal has long been a large importer of food. Since the beginning of the 1970s, imports have accounted for between 40 and 50 percent of the supply of cereals, the dominant staple food. Average annual cereal imports for 1981-85 have been around 530,000 tonnes. An all-time high of 600,000 tonnes was reached in 1984. Recently, however, the growth appears to have leveled off, even though it is too early to judge whether the long-term trend has changed. The main explanations for this high food import dependence are historical, climatic, and geographic. Within the French colonial empire, the division of labor that was encouraged involved groundnut exports from Senegal and imports of rice from Indochina. The concentration of the population near the ports made cereals imports relatively cheap and easy to deliver. The urban—and to some extent also the rural—consumption pattern became dominated by imported rice and to a lesser degree imported wheat. Other cereals, particularly maize and millet, the main traditional staples, were imported in years of crop failure.

Only after 1973/74 did food aid become a significant part of imports. Gradually, the share of food aid within total cereal imports went up from less than 15 percent to almost 25 percent in recent years. The commodity composition of food aid has differed from that of commercial imports, with relatively large shares of wheat and coarse grains in comparison to rice. For fourteen consecutive years, up to 1985, Senegal received *direct* EC cereals food aid. The EC contribution to total cereal food aid to Senegal declined from above 20 percent in the 1970s to about 15 percent in recent years. One could say that EC food aid paved the way for some other food aid donors. In terms of quantities, maize and wheat have dominated EC aid, each accounting for 37 percent of the total, while sorghum and rice each represent 13 percent of the total. Rice, maize, and sorghum have generally been used for free distribution, whereas wheat has been sold to the milling industry, with the receipts credited to a counterpart fund.

Apart from cereals, Senegal also imports sizable amounts of *dairy products*. Between 1981 and 1985 average imports of dried skimmed milk were 15,000 tonnes. Most of this is used to produce reconstituted milk for urban areas. Food aid accounts for only 10 percent of this quantity, implying there is a strong effective demand for milk in Senegal. Dairy product food aid has been dominated by the EC.

Indirect food aid, mostly through NGOs and in the form of dairy products, has also been important—mainly in nutritional and food-for-work projects focused on vulnerable groups. In some cases, NGOs have carried out long-term programs, e.g., for a most ten years SOS SAHEL has run a well-organized program of supplementary feeding for school children and lactating mothers. Apart from nutritional effects, the program has also increased school attendance.

But EC food aid operations in Senegal, particularly the free distribution of direct aid, have been criticized for various shortcomings. An evaluation study carried out in 1982 (Lynton-Evans and Ruche) observed that, even though free distribution generally focused on vulnerable population in rural areas, its effectiveness often was limited by organizational and logistical difficulties: problems of reaching outlying regions, excessive distribution at harvest time, high transport cost (to be paid by deduction from the amount that is freely distributed), and illegal export to neighboring countries. The study's main recommendations were that:

—Free distribution should be limited to exceptional situations,
—Counterpart funds should be integrated in food strategies and policies, and
—Delivery should be CIF rather than FOB.

The most important recent development has been the establishment in 1985 of a *joint (multidonor) counterpart fund (fonds commun de revente*: FCR). The agreement on the FCR was reached after almost two years of negotiations. Before 1985, each food aid donor had separate rules and the funds were usually allocated in a rather *ad hoc* way—mostly financing the Senegalese contribution to bilateral projects, and, in the case of EC aid, often the international transport cost. The FCR was conceived to support the Cereals Plan that is a component of the New Agricultural Policy launched by the Senegalese government in 1984. The main objectives

of the Fund are: to support the farm gate prices of cereals, strengthen rural grain storage, and encourage the consumption of local cereals.

In 1985, a two-year interim program for the FCR was agreed upon, focusing on agricultural input delivery and seed production. Because its implementation was not satisfactory, the donors insisted on a medium-term program that would be more directly linked to the cereals policy and would benefit farmers rather than parastatals. It was agreed that for the 1986/87 season, most of the available funds (70 percent) would be allocated to local cereals marketing, including transport from surplus to deficit regions.

The overall cereals situation at the end of 1986 did not warrant additional food shipments. Therefore, the EC decided to replace the equivalent of 10,000 tonnes of cereals by a direct foreign exchange grant to the FCR. This "substitution operation" provided further support for local cereals marketing (particularly millet and sorghum).

Even though the setting up of a joint counterpart fund can be considered an important step in using food aid as a resource for development, the experience has not been entirely positive. So far, the EC is the only donor that agreed to put *all* its counterpart funds in the common basket. As a result, the EC is by far the largest contributor (60 percent). Other contributions come from Canada, the Federal Republic of Germany, France, the Netherlands, and Japan.

While the EC has the option of conducting triangular food aid operations—that is, of buying food in a developing country for shipment to a (neighboring) country asking for food aid—the production and logistical conditions within the Sahel are such that the potential for organizing triangular food aid and thus stimulating regional food trade are rather limited. Most countries have surpluses of similar crops (millet and sorghum) at the same time. Clearly, there is more scope for developing trade between Sahelian countries and coastal countries. As early as 1982 the EC decided to buy 14,000 tonnes of millet in Senegal for delivery to Chad and Niger. Buying the grain and shipping it to Douala and Lome turned out to be relatively easy, but the further transportation to landlocked Chad and Niger was very difficult and costly. Apart from 11,000 tonnes of sorghum delivered from Thailand in 1985, there have been no triangular food aid operations with cereals going to Senegal.

Food Aid to Tanzania

The differences between the agricultural economies of Tanzania and Senegal have important implications for the role and handling of food aid. Unlike Senegal, Tanzania is not traditionally a big food importer. Its agricultural production capacity in relation to its population is vast, and even though certain regions are facing problems of land degradation, this bears no comparison at all with the advance of the desert in Senegal. In fact, up to the early 1970s, Tanzania exported significant quantities of maize and even rice. Until about the same time, only wheat was imported regularly, while limited amounts of other cereals were imported occasionally to make up for yield fluctuations. Imports of cereals suddenly rose to more than 400,000 tonnes in 1973/74 when Tanzania experienced a bad drought year and for the first time received massive food aid. Adverse weather conditions also prevailed in 1981 and 1982 and led to high food imports. Nevertheless, it is not the weather, but the need to feed a rapidly growing urban population, combined with stagnating marketed production, that has made Tanzania into a structural food importer. Among the underlying causes of this trend have been a strong deterioration of production incentives and an inefficient marketing and transport system.

The share of food aid in total cereals imports has been much higher in the case of Tanzania than in that of Senegal. Between 1981 and 1985, average cereals imports were almost 300,000 tonnes, of which two-thirds were provided as food aid. Senegal had to import much more on commercial terms. Over the same period, the share of *direct* EC food aid in total cereals food aid was somewhat above 10 percent.

The most important component of total cereals food aid has been maize (43 percent) followed by rice (33 percent), and wheat (24 percent). In the case of EC cereals aid, the share of maize is higher (65 percent), reflecting an attempt to deliver goods that correspond to the normal consumption pattern, partly through triangular operations. Three triangular shipments of white maize were decided: from Zimbabwe, in 1981, and from Malawi in 1984 and 1986.

Imports of dairy products largely consist of dried skimmed milk and butter oil to make reconstituted milk for consumption in urban areas. There are few data on commercial imports, but one can assume that they declined over the past decade due to foreign exchange scarcity. The EC provides the bulk of dairy products food aid—both as direct aid and as indirect aid to NGOs or international organizations (particularly WFP).

A distinction between the EC food aid to Tanzania and Senegal is that there have been no free distribution programs in the case of Tanzania, where all *direct* food aid is handled by parastatals—cereals by National Milling Company (NMC), dairy products by Livestock Development Authority (LIDA) as well as Tanzania Dairies Limited (TDL). Since 1975, the receipts (after the deduction of handling cost) have had to be transferred to the Central Bank. The conditions stipulated that the counterpart funds would be allocated through the development budget to agricultural projects (livestock projects in the case of the dairy aid). Information on these projects was only required *a posteriori*. In 1981, less than one-third of the accumulated value of NMC grain sales had been utilized to finance development operations. A small sum (2 million Tanzanian shillings) was provided as cofinance for the Iringa project. One of the reasons for the Central Bank to hold back counterpart fund money was the huge overdraft of NMC (around 2 billion Tanzanian shillings). The situation for dairy products sold by LIDA was more or less similar (see evaluation study of 1982).

In 1982, the Commission of the European Communities (CEC) started negotiations with the Tanzanian government with a view to improving the management of counterpart funds. These discussions were parallel to the food strategy initiative and to the efforts elsewhere to integrate EC food aid into agricultural development cooperation. In 1984, a Memorandum of Understanding was signed stipulating that:

—Food aid deliveries shall be sold to an administering agency (e.g., NMC) at a price that corresponds to the CIF price in Tanzania of commodities of similar quality bought on the world market;

—The proceeds of the sale shall be lodged in a special account with the National Bank of Commerce (rather than the Central Bank); and

—The fund shall be used in financing agricultural development projects *to be agreed upon in advance* jointly by the Tanzanian government and the CEC.

Although the agreement did not prescribe the time lags for depositing and disbursing the money, nor did it touch upon the issue of interest payments, it represented an important step forward. In 1985, a committee with representatives from three ministries (agriculture, finance, planning), the Cooperative Rural Developed Bank (CRDB), and the CEC was formed to supervise and recommend expenditures from the counterpart fund.

The agreed priority areas for spending were in line with the recommendations of the National Food Strategy study that was prepared by the Ministry of Agriculture and completed in 1984:

—Promoting food production in outlying areas,
—Strengthening input delivery systems and agricultural research,
—Improving agricultural data, and
—Reducing postharvest losses and improving storage conditions.

A recent evaluation study (Clay and Benson 1988) concluded that the counterpart fund is functioning reasonably well. Gradually, payments into the fund have become more prompt. Disbursement of approved funds has also been speeded up, but is still rather slow. The main constraint is the capacity to formulate and follow up projects. However, the fact that there is prior discussion on the allocation of funds, rather than a list of actions compiled *a posteriori*, is a significant achievement.

Assessment

The EC food aid programs in Senegal and Tanzania have evolved from an *ad hoc* response to government requests toward the setting up of mechanisms to use food aid as a resource for development in coordination with other development actions. The success of this shift in approach relies, in the first place, upon assuring that the food shipments are well planned (timing, type, and quality of product) in relation to the crop situation and other imports, and that the food products are sold at a normal market price. Once these conditions are fulfilled, it is the management of the counterpart funds that is crucial for the development impact of food aid. The allocation of counterpart funds makes it possible to target the resource transfer embodied in food aid. In Senegal, as well as in Tanzania, there has been significant progress with respect to the management of counterpart funds.

Because of the fungibility of monetized resources including food aid, the management of counterpart funds should emphasize sound advance planning and monitoring of the actions, and avoid a pure accounting approach drawing up a list of past activities. The arrangements now in place in both Senegal and Tanzania are satisfactory except for the lack of administrative capacity to formulate and follow up projects.

It also appears that in both Senegal and Tanzania indirect food aid via NGOs is targeted well toward the most vulnerable groups. However, the evaluation studies referred to above pointed out the need for better training of local NGOs in the handling of food aid (storage, transport, and processing).

STABEX

Basic Rules of the System

The STABEX system—designed to mitigate the adverse effects of fluctuations in export earnings—has been operational since the first Lome Convention (1975) and has been improved during the second and third Conventions. In essence, STABEX compensates for shortfalls in export earnings for tropical agricultural products on the EC market. For some countries that traditionally had only very limited trade with the EC and that would otherwise hardly ever benefit from the system, exports to all destinations are covered. At present, thirteen countries (with Ethiopia the largest among them) are in this situation.

Transfers to compensate for earnings shortfalls are normally determined on a commodity-by-commodity basis. In several cases, however, primary commodities and first-stage processed commodities are both covered, and such related commodities may be aggregated. The commodity-by-commodity approach constitutes a distinction from the IMF's Compensatory Financing Facility (CFF), which compensates on the basis of the total export position. The justification for the STABEX approach is that, in principle, the compensation should serve to restore financial flows in the specific sector that is hit by the shortfall.

Earnings shortfalls can arise from international price movements as well as quantity changes. Quantity fluctuations are usually the result of domestic problems (e.g., crop failure or processing bottlenecks), even though they may also arise from international factors.

Two basic conditions must be fulfilled to trigger a STABEX transfer for a specific product (or group of related products):

1. The country's exports must depend significantly on the particular product: the share of the product in total goods export value must exceed a *dependence threshold* (export to all destinations);
2. The percentage shortfall of export earnings in the year of application, compared with the average of the four preceding years (i.e., the reference level), must exceed the *fluctuation threshold* (export normally to EC).

For the third Lome Convention, the dependence and fluctuation thresholds are *both* 6 percent except for land-locked, insular, and least developed countries, for which they are 1.5 percent. In fact, the "normal" 6 percent applies only to thirteen of the sixty-six ACP countries. Both Cameroon and Senegal belong to this group, whereas Tanzania is part of the group of least developed countries.

Normally, the transfer payment covers the full shortfall

between exports for the application year and the reference level. However, if there are significant changes in the ratios between production, marketed production, export to all destinations, and exports to the EC, the transfer may be reduced. As a rule, the kind of change that would warrant a reduction would be one caused by circumstances within the control of the countries concerned.

There is a large degree of freedom on the use of the funds. The convention stipulates that transfers must be devoted to maintaining financial flows in the sector in question or to diversification. The transfer request must include information on the specific actions to which the funds will be allocated. Within a year of the signing of the transfer agreement, the ACP state must further send a report on the actual use of the funds, including an assessment of the impact of the allocation.

If the situation for a product that led to a transfer improves significantly, the beneficiary country must repay the funds. This replenishment obligation contributes to future STABEX resources and increases the sustainability of the system. The least developed countries are exempted so that the transfers for them are always grants. Presently forty-three of the sixty-six ACP states are least developed. Even for countries that must contribute to the replenishment, the conditions are such that there is still an important grant element. The examination of whether or not a transfer must be repaid starts in the year following the year when the payment was made and involves a comparison of the preceding year with averages for the four years prior to that year. Both unit values and quantities exported must have recovered, and earnings must have increased by at least 6 percent. If these three conditions are fulfilled, the repayment obligation is determined as the difference between earnings for the control year and the four-year average, without exceeding the value of the original transfer.

Actual repayment is spread over five years, preceded by a two-year grace period. No interest is charged. Repayment conditions are checked over a period of seven years, after which period there is no further obligation to replenish. It is possible to use a new transfer in whole or in part for repayment. Furthermore, under the third Lome Convention, it is possible to replenish in local currency which can be utilized as counterpart money for EDF-financed projects.

A particular problem arises because of currency fluctuations. The implicit principle of STABEX is to compensate for losses in local currency. Therefore the basis of calculation is the local currency (FOB) export value. But the actual payment is in ECU—so that the exchange rate is important in deriving the value of the transfer. Under Lome III, shifts in exchange rate between the reference period and the application year are restricted to 10 percent upward or downward ("tunnel method")

STABEX is designed as a quickly disbursing support facility. Therefore the procedures are carried out within a strict time schedule. Requests for a particular year must be submitted during the first quarter of the following year and except for cases where cross-checking is difficult, the CEC decides before the end of July. Upon receiving information from the beneficiary country on the use of the funds, a transfer agreement is signed, and funds are released almost automatically. There is also a possibility of advance payment in the course of the application year or later. The smooth and rapid functioning of the system, particularly for the payment of advances, depends on a regular flow of information from the ACP country to the CEC.

STABEX in Cameroon

Cameroon has received approximately 34 MECU worth of STABEX transfers. Under Lome I, two transfers were paid: one for wood, amounting to 3.6 MECU; and a small one for cocoa paste, amounting to about 0.5 MECU. Important STABEX transfers in favor of Cameroon were for the application year 1981 (9.1 MECU for coffee and 8.1 MECU for cocoa). Unfortunately, 1981 was a crisis year: world commodity prices were at extremely low levels, and the overall value of approved STABEX claims far exceeded the resources of the system for that year (less than 50 percent of the claims were covered). Almost all transfer claims had to be reduced. As a partial compensation for the lack of funds a special project grant of 40 MECU was approved in 1982. Out of that grant, Cameroon received 1.5 MECU for coffee and 2.3 MECU for cocoa products.

After 1982, mainly because the bad years 1980 and 1981 were included in the reference period, the total value of STABEX transfer claims decreased drastically, so that when the Lome II STABEX accounts were closed in 1986, a surplus remained that was used to further compensate for the lack of resources in 1980 and 1981. Consequently, Cameroon was allocated another 3.5 MECU for coffee and 5.2 MECU for cocoa products—making its total for the 1981 application year 14 MECU for coffee and 15.5 MECU for cocoa. Most of the 1981 transfers were used to finance agricultural inputs and rural roads, as well as to support the cooperative movement.

Cameroon did not benefit from STABEX transfers for the application years 1982 to 1986. This was partly because of the growth of oil exports, which pushed several agricultural products below the dependency threshold, but mainly because fluctuations have not exceeded the threshold for several years. In 1987, prices for many commodities were extremely low, and Cameroon experienced sizable declines in export earnings for coffee and cocoa (more than 100 MECU). The situation for 1987 was similar to the one for 1981: the STABEX system's resources were not sufficient to cover all claims—even taking into account an additional 120 MECU made available from reserves of the EDF. Consequently, all claims had to be reduced. Furthermore, Cameroon had replenishment obligations of 18 MECU that were deducted. The resulting net transfer for 1987 amounts to 8 MECU for cocoa and 34 MECU for coffee.

STABEX in Senegal

Senegal's export earnings strongly depend on groundnut products destined for the EC. This fact, combined with the vulnerability of groundnut yields to drought and with the volatile nature of the world vegetable oil market placed Senegal in a position to be a major beneficiary of STABEX. Indeed, so far Senegal has been the largest recipient of STABEX funds, with an accumulated total of transfers amounting to 238 MECU over the period 1978-87. Because Senegal has to contribute to the replenishment of the system, however, net payments received have been slightly lower at 212 MECU. Moreover, even though Senegal is the largest STABEX beneficiary in absolute terms, this is not so in per capita terms: Swaziland, Gambia, and several small island states benefited more than Senegal in per capita terms.

An overview of STABEX payments to Senegal is given in Table 4. One can see that while claims relate to only five application years, payments have been made over nine years, with two periods of concentration: 1978-81 and 1985-86.

Table 4
Time patterns of STABEX transfers to Senegal (MECU)

Payment year	Type of payment	Application year 1978	1980	1981	1985	1986
1978	advance	19.0				
1979	balance	46.1				
1980	advance		25.0[a]			
1981	balance, advance		13.6	18.0		
1982	balance			2.5		
1983	project grant			5.7[b]		
1984	—	—	—	—	—	—
1985	advance				15.0	
1986	reliquat,[c] balance			25.7	12.6	
1987	advance, balance					54.5[d]

[a] 18 MECU paid in June, 7 MECU paid in October.
[b] Disbursement started in 1983.
[c] Amount received when the Lome II accounts were closed.
[d] Advance of 30 MECU was received at the beginning of the year.

The importance of (net) STABEX payments for the Senegalese economy can be assessed by expressing them in relation to some macroeconomic variables:

	1978-81	1985-86
Share of total export revenue	7.1 percent	4.4 percent
Share of total government revenue	6.9 percent	4.7 percent
Share of net aid disbursement	17.3 percent	15.0 percent

The stabilizing effect of STABEX has been greatly increased by the payment of advances within the year of the export shortfall, which amounts to very rapid disbursement of funds. This was made possible by the good cooperation between Senegal and the CEC on export statistics.

The data in Table 5 enables a broad overview of the timeliness of STABEX transfers. On the whole, the transfers provided support when it was most urgently needed. The timeliness of Lome II application years (1980-81) appears to have been slightly better than for Lome I or Lome III. However, a big problem with the 1980-81 transfers was the lack of resources of the STABEX system referred to above. Senegal received only about 45 percent of its established claim. Besides, the transfer value was already reduced because of a decline in marketed surplus and a fall in the share of EC in total exports. The amount received in 1986 when the Lome II accounts were closed covered only a small part of the remainder. One can also see in Table 5 that production decline due to drought has been the dominant cause for export revenue shortfalls (except for 1986).

For the application year 1987, Senegal has chosen to use the transfer right for groundnut products largely to offset the amounts due to replenish earlier transfers. Similar to the case of Cameroon, as mentioned above, all transfers for 1987 had to be reduced because of the lack of resources in the STABEX system leading to a net transfer of only 1 MECU.

As regards the utilization and impact of the STABEX transfers, the complexity of the Senegalese groundnut system, as well as the fungibility of funds that are transferred, preclude any firm conclusions. Furthermore, the reports provided by Senegal are rather sketchy. They only show the allocation of STABEX funds in a general accounting sense, making it difficult to estimate the economic effects on groundnut producers. For Lome I, an evaluation study, on which some of the comments below are based, was carried out by Chambas et al. in 1981.

Most STABEX transfers to Senegal were channeled to the Caisse de Péréquation et de Stabilisation des Prix (CPSP), a government body that is responsible for price stabilization of groundnuts and several other agricultural products. If export prices are below the officially guaranteed producer prices, taking into account transformation and transport costs, CPSP covers the deficit. If export prices exceed official prices, it collects the surplus through a levy.

It can be inferred from Table 5, that production shortfalls, actually caused by drought, have been a major problem for groundnut producers. As a result, producers have been unable to repay advances obtained for seed and fertilizer.

Table 5
Senegal: STABEX receipts, groundnut export value, and prices

Year	Net STABEX payment[a] (billion CFAF)	Export value[b] groundnut production (billion CFAF)	Production[c] groundnuts (ktons)	Unit value groundnut oil exports (CFAF/kg)	Producer price groundnuts[d] (CFAF/kg)
1975	0.0	40.3	980.0	159.0	40.0
1976	0.0	64.5	1,412.0	164.0	40.0
1977	0.0	75.5	1,208.0	215.0	40.0
1978	5.3	23.5	519.0	252.0	40.0
1979	13.5	40.2	1,061.0	215.0	40.0
1980	7.4	14.9	650.0	181.0	46.0
1981	9.5	9.1	521.0	287.0	50.0
1982	0.8	42.1	867.0	205.0	70.0
1983	1.9	55.3	1,145.0	230.0	70.0
1984	0.0	54.5	575.0	460.0	70.0
1985	5.1	23.7	490.0	461.0	80.0
1986	14.5[d]	24.4	601.0	211.0	90.0

Source: World Bank Report No. 6454.SE (period 1981-86), except first column.
[a] The Lome II balance allocated in 1986 was used to replenish part of the 1980-81 transfers and is not included in the table.
[b] Exports to all destinations, usually more than 85 percent is to EC.
[c] 1975 = 1974-75 season, etc.
[d] Including advance paid beginning of 1987.

This has led to the use of a large part of STABEX funds to cancel farm debts. Other important uses were financing of the fertilizer subsidy and covering the cost of the dissolution of ONCAD (paying its debt to cooperatives and input suppliers). Even though ONCAD stopped functioning in 1981, the 1985 transfer was still officially allocated to cover the financial consequences. Smaller parts of STABEX have been used as counterpart contributions to various rural development projects, to buy millet for an emergency food reserve, to pay for animal feed to help cattle farmers hit by drought, and to improve rural water supply. The special project grant (5.7 MECU) was used mainly for the micro projects program and rural water supply.

In conclusion, most of the STABEX transfers allocated to Senegal have contributed to maintaining the revenue of groundnut producers—*largely indirectly* by canceling debts on input supply (especially in 1978, 1980, 1981, and 1985), *partly directly* by guaranteeing a higher price than the export market allowed (especially 1985 and 1986), and through emergency relief operations. The rural community further benefited indirectly from the investments financed with STABEX money (e.g., water supply facilities). The support of the groundnut system also helped to maintain economic activity in the rest of the economy through demand and supply linkages. To some extent it must be admitted, however, that STABEX has also facilitated for some time parastatal inefficiency (particularly by paying for the liquidation of ONCAD).

STABEX in Tanzania

There are some important differences between Cameroon and Senegal on the one hand and Tanzania on the other with respect to STABEX:

—Tanzania belongs to the group of least developed countries, so that it qualifies for the lower thresholds and does not contribute to replenishment;

—Tanzanian exports are much less concentrated on the EC (average EC share is around 40 percent); and

—Fluctuations in exchange rate ECU/Tanzania shilling can have a strong influence on the size of transfers.

Tanzania has received a large number of relatively small transfers totaling 50 MECU. STABEX certainly did not have the macroeconomic impact there that it had in Senegal. Nevertheless, the more or less regularly available untied foreign exchange provided by STABEX was very useful for the government's development budget—to cushion against delays in donor disbursements, to cope with cost overruns, or, sometimes, to remove supply bottlenecks (Hewitt and Weston 1981).

About 60 percent of STABEX transfers were provided for sisal. Yet sisal export earnings have almost continuously declined since independence, with only a brief upswing in the second half of the 1970s when prices followed the upward move of synthetic fibers. For 1986 sisal exports went below the dependency threshold of 1.5 percent so that the fall in earnings could no longer be compensated. The coffee transfers of 1980 and 1981 would have been substantially higher if STABEX resources had been adequate and if the Tanzanian shilling—pegged to the U.S. dollar—had not appreciated vis-a-vis the ECU.

About 75 percent of the Lome I transfers went outside agriculture—financing two cement factories, a large-scale mineral survey, and power transmission lines. The remainder was allocated to the grain marketing parastatal, National Milling Corporation (NMC), for storage facilities. The Hewitt Weston study (1981) found that the agencies that received STABEX money were not aware of the origin of the funds. Later transfers were more concentrated on agriculture, including the sector that triggered the transfer. A large part of the 1983, 1984, and 1985 sisal and cashew transfers were allocated to the rehabilitation plans of these sectors carried out by the relevant parastatals. Lack of data makes it impossible to judge the effectiveness and impact of these actions.

STABEX resources also have been used:

—To pay EIB arrears (1.9 MECU);

—As complementary finance for various projects, including the EDF vehicle repair project;

—To finance petroleum imports urgently needed for the transport of agricultural inputs and products.

For application years 1986 and 1987, STABEX requests for sisal, tea, coffee, and cotton have all been rejected, most importantly because of the application of the "tunnel method" (discussed above) to restrict exchange rate movements. The latter method, introduced in Lome III, worked out very unfavorably in the case of Tanzania.

Assessment

The role of STABEX has been different in each of the three countries under consideration. For Senegal, STABEX transfers represented a very significant proportion of export revenue, government revenue, and aid disbursements. They enabled the government to mitigate the effects of disastrous crop failures on the economy. The STABEX transfers to Cameroon were much smaller in relation to macroeconomic indicators. However, because most transfers took place at a time when the economy was less strong, the effects have been positive. STABEX transfers for Tanzania also were small compared to macroeconomic variables—but they were all in the form of grants and certainly helped to cope with Tanzania's acute foreign exchange problems.

Some general observations nevertheless can be made about the varied experience of Cameroon, Senegal, and Tanzania:

—STABEX is a quick-disbursing and flexible source of funds. The use of funds is untied and virtually unconditional (funds are to be used within the sector hit by the shortfall or to foster diversification).

—A major advantage of STABEX is that it covers shortfalls regardless of their source (excluding explicit government policy decisions).

—The operational rules of the system virtually exclude distortive effects on the trade flows. This was confirmed by the Lome I evaluation study (Hewitt 1982). STABEX is neither designed to save nor capable of saving a sector that faces a declining market (e.g., sisal in Tanzania). It can, however, help reconversion toward more profitable lines of activity. In this respect, STABEX compares favorably with commodity agreements, which usually compensate only price effects and may lead to the spread of quota that distort production patterns.

—STABEX transfers should be as neutral as possible with respect to exchange rate fluctuations. It is the loss of purchasing power that should be compensated—a restriction being the transparency and manageability of the operating rules. Tanzania has suffered from the way exchange rate changes were handled. The "tunnel method" introduced in Lome III punishes countries applying an adjustment program that includes substantial devaluation. Because both Senegal and Cameroon

participate in the CFA system, there have been no problems in their case, because CFA currency has been rather stable in relation to the ECU.

—Without diminishing the flexibility of the system, it would be desirable in certain cases to link STABEX more closely to project aid, especially when the funds are channeled to the shortfall sector. In Tanzania's case, this would have meant integrating STABEX resources in EDF support for coffee. In the case of Senegal, it would have implied some follow-up to the substantial EDF involvement in groundnut production in the 1960s and 1970s.

—It would be desirable to take into account projections of STABEX flows in the context of designing structural adjustment packages, even though such projections are technically rather difficult. When the projected flows are large, this would imply a corresponding EC involvement in adjustment discussions.

—The smooth functioning of the STABEX system depends crucially on availability and quality of statistics (production levels, marketed surplus, export value, and quantity). Especially in the case of Tanzania, but also in those of Cameroon and sometimes Senegal, establishment of statistical data accepted by both parties to compute the transfers has been difficult. It would be worthwhile to explicitly foresee a country allocation for improved data collection, management, and training to avoid these problems.

Recent Developments

Following the 1972-74 world food crisis, more aid funds were channeled toward food production. This clearly applied to EC cooperation with Cameroon and Senegal. Nevertheless, around 1980 it became clear that this quantitative change did not fundamentally improve the food situation, particularly in Sub-Saharan Africa. In reaction to this state of affairs, the EC launched in 1981 an initiative to support food strategies in a number of countries.

The main characteristics of the *food strategy approach* are:

—*Concentration of funding* in view of the basic objective of food security;

—Definition and implementation of coherent policies to promote food security through a process of *policy dialogue*;

—Strengthening *coordination among donors*; and

—*Integration of instruments* for the same objective (e.g., food aid sold at market price and counterpart funds used for supporting rural development).

These characteristics subsequently have been made central features of the third Lome Convention; in this way, the food strategy approach has been generalized. In the context of Lome III, this approach is referred to as sectoral concentration—with the chosen sector usually being agriculture or rural development. The policy dialogue is, as a rule, focused on the sector of concentration.

The new approach has led to the formulation of large rural development programs, usually costing between 20 and 100 MECU. These Lome III programs are different from the earlier "integrated rural development projects," mainly because of the element of policy dialogue. By their very nature, such large programs are not spelled out in detail during appraisal. As a result, while commitments have been speeded up, due to the size of the programs, there has been a slowdown in implementation and disbursement of Lome III funds in comparison to previous Conventions. To some extent, the slower disbursement also follows from the increased concentration on food security and rural development, which generally leads to more complex actions focused on a dispersed group of smallholders. Large infrastructure projects, which used to account for the greatest share of EC funding, are more straightforward to appraise and implement.

The possibility of financing *sectoral import programs* (SIPs), introduced by Lome III, may compensate for the slow disbursement of the large rural development programs. Recently, several import programs have been worked out. Such SIPs are normally linked to the concentration sector. For Cameroon, a fertilizer import program (15 MECU) is under preparation (see below). For Senegal, fuel imports will be financed, and the resulting counterpart funds will be used to support the groundnut sector (11.5 MECU). In the case of Tanzania, it is planned to finance imports of raw materials and spare parts to increase capacity utilization in the industrial and transport sector (24.5 MECU). The Senegal and Tanzania import programs are financed from a special budget approved at the beginning of 1988 to assist debt-distressed countries. The latter budget has also introduced the possibility of funding general import programs within the context of economic adjustment operations.

Cameroon

The indicative program (IP) for the third Lome Convention was signed in May 1986 and stipulated a concentration of 80 percent on rural development. Later on, the rural development share was slightly lowered to around 70 percent in order to free funds for the road Yaounde-Ayos (160 kilometers). Noncommitted funds as well as unspent amounts of closed projects from the fourth and fifth EDF also have been earmarked for the road, bringing available resources to around 60 MECU. As the road forms part of the vital link between the North and center of the country, it will reduce the price at which local food is available in Yaounde, and it can have an important stimulating effect on the agricultural sector.

The rural development component consists mainly of a few large programs that build on past experience, as well as a sectoral import program. One specific program, for the Benoue Basin (25 MECU), was already approved in 1987 and continues the prior EDF activities discussed earlier.

In contrast to the Benoue program, progress on the continuation of irrigated rice activities is rather slow. The main reason for the delays has been the need for the government to take appropriate measures to protect its rice market, so that production from North Cameroon can compete with imports. Beginning in 1988, and following extensive consultation with the EC, the government has decided to set up a price stabilization agency.

At the end of 1987, the government requested finance for a fertilizer import program that complements a similar

USAID program. The EC reacted favorably because the program is linked to important policy reform measures: the phasing out of fertilizer subsidies, and liberalization and privatization of fertilizer trade. The program (15 MECU) was approved in October 1988 and the first fertilizer shipment arrived in December 1988.

Senegal

The Lome III indicative program was already signed in July 1985. It stipulated both a thematic and geographic concentration of funds on food security and the struggle against desertification in the lower Senegal River area. The full indicative program (97 MECU) has been committed to a development program of the Podor region that was approved in the spring of 1987 and that strengthens earlier EC activities in the Senegal River area. It contributes to the investment that is necessary for exploiting the potential created by the two dams recently completed on the Senegal River.

About half of the Podor program is earmarked for the construction of irrigation facilities and a quarter is for infrastructure (including road rehabilitation, construction of access roads, and water supply for Podor town). Smaller program components are reforestation (5 MECU); supplies for small-scale enterprises (4 MECU); social infrastructure for villages (9 MECU); and management, monitoring, and evaluation (8 MECU). The main output of the program will be in the form of rice to be used for subsistence and for marketing in the rest of the country. The economic and financial results of the program depend very much on the future condition of the cereals market. During and after appraisal, the EC has therefore been associated with the policy dialogue concerning cereals pricing and marketing. The program is consistent with the cereals plan that the government worked out in 1984 and that foresees: incentives for locally produced cereals (at production and processing levels), the limitation of rice imports at 1984 levels, and a tariff on cereals imports.

It should be emphasized that the Podor program cannot be judged only in terms of its economic return at the currently prevailing low world prices. Its contribution to a better regional balance within Senegal and to the preservation of the environment should also be taken into account. (This applies equally to the rice program in Cameroon.)

Tanzania

As in the case in Senegal, the Lome III indicative program for Tanzania was already signed in July 1985. It was agreed to concentrate 90 percent of the resources on food security and agricultural development. The policy intentions of the government in areas directly relevant to the program were spelled out (e.g., increase in producer prices, prompt payment, and adequate retention of foreign exchange in the coffee sector).

The agricultural sector support program (ASSP) concretized the ideas of the indicative program; in fact, it became the first "Lome III-style" program that was submitted to the EC Member States. The allocations for the main components are:

—Food security	21 MECU
—Coffee production and marketing	23 MECU
—Assistance to cooperative unions	8 MECU
—Vehicle and tractor repairs	26 MECU
—Feeder roads	10 MECU
—Institutional support	6 MECU
Total	94 MECU

Apart from the foreign exchange component, there is a local currency contribution equivalent to 35 MECU to be provided to a large extent from food aid counterpart funds. The ASSP is concentrated on the areas with good potential for maize and coffee production in the Southern Highlands. The coffee component also includes follow-up of previous actions in other coffee areas. The vehicle and tractor repair component builds on a similar successful project carried out between 1982 and 1984.

Approval of the ASSP, toward the end of 1986 was speeded up because of the favorable attitude prevalent among the donors in the wake of the Economic Recovery Programme that Tanzania had agreed to in mid-1986. Implementation of the ASSP has been slow, however, and by the end of 1987 only a very small part of the funds were disbursed (a delivery of fertilizers for about 1 MECU). Partly, this slow disbursement follows from the nature of the approach, which leaves much flexibility, but thereby many details to be worked out, at the implementation stage. Important policy issues that affect the program—for example, the pricing of fertilizers and the distribution of responsibilities between the marketing board and cooperatives in the coffee sector—remain unresolved.

Concluding Observations

Drawing general conclusions from the foregoing description of EC cooperation with Cameroon, Senegal, and Tanzania is difficult. The complexity of agricultural development issues prevents easy generalization. This section contains some observations that reflect EC experience and may help to make agricultural development cooperation more effective.

On the whole, projects focused on *export crops* have been more successful than those aimed primarily at food production. Export crops have, in many cases, made important additions to farm revenue, including revenue of smallholders. A possible explanation is that export crops could build on more institutional and other resources. It is generally easier to attract progressive farmers to a new venture than to upgrade traditional crops for a large, dispersed group of subsistence producers.

In view of this, the shift within the EC's project portfolio from export crops toward food crops (particularly in Cameroon and Senegal, and to a lesser extent in Tanzania, where support for coffee has been continued) may reduce its overall rate of return. It is sometimes overlooked that a food security strategy can be compatible with export or cash crop development—providing additional farm revenue that can be used to improve food consumption and nutrition. There are also cases where export crop development is complementary to subsistence crop production, e.g., the export crop revenue makes it possible to buy inputs and to obtain credit that can be used for food crops. For the future, it may be desirable to reemphasize export

crops with a view to exploit these complementarities.

In comparison, export crop activities have been more successful in Cameroon (palm oil, cotton) than in Senegal (groundnuts, cotton), and Tanzania (coffee, pyrethrum), where frequent institutional and policy changes have been among the main constraints. The situation has been aggravated in Senegal by adverse weather and in Tanzania by an overambitious project design.

Integrated rural development projects became more or less a standard approach during the 1970s. The "integration" idea considered the agricultural sector within its socioeconomic setting. As a result project activities were broadened to include health, training, credit systems, and local infrastructure in addition to crop development. Even though the basic arguments in favor of integrated rural development are valid, the approach has often led to disappointing results (e.g., Iringa in Tanzania). While it has generally been possible to reach physical targets, such as the construction of feeder roads, warehouses, and cattle dips, it has been difficult to obtain a sustainable impact on farm revenue. Integrated projects have attempted to achieve their objectives over too short a period in relation to the complexity of the task. They have tended to overstretch local management and have not succeeded in sufficiently involving local communities.

In addition to these "internal" problems there have also been "external" problems affecting the results of integrated projects. The external problems mainly relate to the overall policy environment. Even the best "integration" cannot compensate for a lack of production incentives. This may not be apparent at the height of a project when the extra resource inflow (inputs, technical assistance) leads to positive physical results. However, once the resource flow is phased out, farmers may be forced to return to their traditional strategies.

The success of the Northeast Benoue settlement project may be attributable to the relatively modest targets, the geographical concentration, and the less distorted economic conditions in Cameroon. The lack of success in Eastern Senegal demonstrates the importance of involving local communities in basic decisions (e.g., on the cropping pattern).

The EC has been very active in supporting *irrigation schemes*. While there have been important successes in technical terms—in terms of yields, for example—their capital and recurrent costs have often been very large with frustrating overall economic results. Small schemes have done much better than the larger ones, mainly because the farmers' participation reduced the overhead costs and enhanced sustainability.

To some extent, these problems have been the result of the artificial conditions that sometimes prevail on the world cereals market. In the cases of Cameroon and Senegal, the appraisal of major irrigated rice projects took place in 1974/75 and 1980/81—a time when rice prices were at record high levels. Full production was attained in 1986 and 1987, when world rice prices were depressed and when good rainfall had pushed up the yields of traditional cereals. Appraisal methods cannot cope with high price uncertainty. It is doubtful whether project funds should be earmarked in advance to absorb losses that may result from price movements.

In connection with further investments in irrigated rice production, the EC has encouraged countries to stabilize and protect their rice markets, and some measures have already been taken. *Price stabilization* may help to overcome risk aversion on the part of farmers. It is possible to support price stabilization with the counterpart funds that result from a general import program or from food aid.

Some form of *protection* will often be required to achieve a lasting effect on production. An important distinction should be made between protection on economic grounds and protection to achieve noneconomic objectives. Protection on economic grounds should be temporary—applied to bridge the period before the newly introduced farming system can operate at minimum cost (the infant industry argument). In agriculture, this can take a long time. Protection for noneconomic objectives (e.g., environment, rural employment creation, and balanced regional development) should be compared with other ways of reaching those objectives (e.g., through increased support for traditional crops, livestock, or fisheries activities and investment in human capital in the form of better rural health care and education). The objectives should be clearly identified. A judgment should be made on who should bear the burden: the consumer paying more for food as a result of a tariff, or the taxpayer when support is financed through the budget.

In the three countries under review, but more so in Senegal and Tanzania than in Cameroon, there has been successful experience with *small-scale projects*—both with micro projects handled entirely by the beneficiary country and with NGO-cofinanced projects. The small-scale projects have acted as catalysts to trigger local initiatives. They have also been less affected by administrative delays. The main constraint has been the shortage of capacity for preparation, management, and monitoring. Because of their success, the potential for small-scale projects should be exploited as much as possible. There should be adequate attention for the programming and management aspects of such projects, as well as for training. Whenever feasible, local organizations such as farmers' association, credit unions, or cooperatives should be involved. Particular attention should be paid to employment creation for women in the development of rural infrastructure, and the processing of agricultural products. Moreover, in view of the pressing need for conservation, it is essential to integrate crop, livestock, and forestry activities.

There has been an important evolution in the handling of *food aid* in relation to agricultural development. In many countries, including Senegal and Tanzania, arrangements have been set up to use food aid counterpart funds primarily for rural development. In this way food aid is an additional resource that complements other funding for rural development. The discussions related to the use of food aid also have been a useful entry point for a more general food policy dialogue.

The STABEX *system*, now in operation for about fifteen years, has proved its viability. It is a quickly disbursing instrument of EC funding, and its functioning does not distort trade and production patterns. In the case of Senegal, the STABEX transfers have had an important stabilizing effect on the groundnut system, and therefore on the economy as a whole. In Cameroon and Tanzania, they have been used for a variety of purposes, sometimes outside the agricultural sector. There is potential to use the STABEX transfers more directly for the benefit of agricultural producers. When projected STABEX flows are sizable, they should be linked to adjustment discussions.

Traditionally the EC has not been involved in providing *policy advice* to developing countries. Toward the beginning

of the 1980s, the constraining effects of a deficient agricultural policy environment became very clear in many Sub-Saharan African countries. The EC did not have the opportunity, for lack of a mandate and for lack of the necessary skills, to engage in policy-based lending. Nevertheless, the *food strategy initiative*, launched in 1982, introduced a food sector policy dialogue. Through this policy dialogue the EC attempts to reach agreements with recipients on the implementation of specific policy measures necessary for agricultural projects to succeed. The policy dialogue has generally concerned price incentive issues (e.g., protection) and the reform of parastatals dealing with the agricultural sector.

Senegal, Tanzania, and Cameroon have not been among the countries where the EC's food policy dialogue has had a strong impact. In some other countries, e.g., Mali and Kenya, there were more significant results.

The EC policy dialogue has remained sector specific and has not led to conditionality where implementation would be automatically linked to specific policy measures. The substantial STABEX transfers to Senegal, for example, were made without consideration of policy measures to improve the performance of the affected sector.

The introduction under Lome III of *sectoral import programs* as well as the 1988 EC Council resolution on structural adjustment may increase possibilities for policy based lending. Moreover, general import support is being provided through the Special Programme of Assistance for debt distressed countries in Africa, that was also approved in 1988. In the area of structural adjustment, the EC is particularly concerned about the integration of social considerations in the design of adjustment packages. In addition to food security, these include the maintenance of the level of health and education services for vulnerable population classes, as well as employment schemes for employees of the public sector that were laid off. The sectoral import programs or food aid help finance social interventions either directly through the goods supplied or indirectly by channeling the counterpart funds resulting from the sale of imported goods to the government budget.

Annex Table 1[a]
Cameroon: Main agricultural projects EDF 1-3 (1,000 ECU)

Title of action	Amount
EDF 1 (1958-64)	
Health Training Northern Cameroon	1,200
Soil Conservation	717
Livestock Improvement (Adamaoua)	500
Rural Roads (2 projects)	1,102
Hydro-geological Study Northern Cameroon	920
Agricultural School	474
EDF 2 (1965-70)	
Agricultural Production: Groundnuts, Coffee, Cotton (5 annual shares plus extension for two crop years)	7,068
*Palm Oil Plantation (4,380 hectares at Mondoni)	6,482
*Rural Development in Northeast Benoue	637
EDF 3 (1971-75)	
*Palm Oil Plantation (6,000 hectares at Dibombari)	2,790
*Agro-Industrial Complex Dibombari (special loan)	8,850
Sugar Cane Plantation and Mill (grant)	772
*Continuation Rural Development N.E. Benoue	4,050
*Irrigated Rice Logone and Chari	391

[a]Projects that are starred in Annex Tables 1-5 are reviewed in Section 3.

Annex Table 2[a]
Senegal: Main agricultural projects EDF 1-3 (1,000 ECU)

Title of action	Amount
EDF 1 (1958-64)	
Fisheries Wharf Dakar	611
Livestock Research Center	2,110
Drilling and Construction of Wells	2,431
Construction of 30 Rural Development Centers	2,094
School for Rural Advisers	506
EDF 2 (1965-70)	
*Groundnut Program (5 annual shares plus extension for two crop years)	30,980
*Groundnut Program (special loan)	5,900
*Cotton Development Sine Saloum	3,448
*Cotton Development Casamance, Eastern Senegal	1,072
Rice and Bananas in Casamance	2,063
Rice Production in Casamance	1,731
*Confectionary Groundnuts Sine Saloum	996
*Groundnut Seeds (1971)	492
*Setting up of Seed Service	2,972
Vegetable Production	1,000
Millet Improvement Program	1,207
Construction of 2 Slaughter Houses (St. Louis, Thies)	466
EDF 3 (1971-75)	
*Exceptional Aid for Groundnut Producers	7,185
*Continuation Cotton	4,656
*Cotton Processing Plant	957
*Continuation Confectionary Groundnuts	2,219
Agricultural Development in Casamance	712
*Rainfed Rice in Eastern Senegal	1,008
Drought Relief Operation	1,800
Livestock Development	5,865
*Nianga Irrigated Perimeter	5,797
Village Water Supply	3,008
Commercial Vegetables and Fruits (BUD Senegal)	3,322

[a]Projects that are starred in Annex Tables 1-5 are reviewed in Section 3.

Annex Table 3[a]
Cameroon: Main agricultural projects EDF 4 and 5 (1,000 ECU)

(Situation April 1988)

Title of action	Decided Year	Decided Amount	Paid	Percent paid[a]
EDF 4 (1976-80)				
* Dibombari (grant)	1977	2,192	2,192	100.0
* Dibombari (risk capital)	1977	2,300	2,300	100.0
* Micro Projects	1977	403	403	100.0
* Village Palm Oil (grant)	1977	329	329	100.0
* Village Palm Oil (loan)	1977	688	688	100.0
* N.E. Benoue (second phase)	1978	4,087	4,087	100.0
Djuttitsa Tea (grant)	1978	1,420	1,396	98.3
Djuttitsa Tea (special loan)	1978	1,233	1,233	100.0
* Irrigated Rice Logone Chari	1978	4,471	4,250	95.0
N.W. Province Rural Development	1981	8,920	5,019	56.2
Total		26,043	21,897	84.1
EDF 5 (1981-85)				
* Interest Subsidy SOCAPALM	1982	1,039	660	63.6
Interest Subsidy CAMDEV	1982	1,911	1,340	70.1
* Rural Development Benoue Valley	1982	13,180	12,991	98.5
* Micro Projects	1982	457	394	86.2
* Irrigated Rice Logone Chari	1983	1,080	913	84.5
* Continuation Logone Chari	1984	8,970	6,376	71.0
Continuation Djuttitsa Tea	1984	713	713	100.0
Interest Subsidy HEVECAM	1984	2,260	2,260	100.0
* Fisheries Benoue, Lagdo	1984	2,000	1,626	81.3
* Village Palm Oil Dibombari	1986	1,110	157	14.1
N.W. Province (Bafut Rural Devel.)	1986	1,500	482	32.1
Interest Subsidy SODECOTON	1986	1,188	0	0.0
Total		35,407	27,914	78.8

[a] Amount paid (or disbursed) as a percentage of the amount decided ("primary" commitment).

Annex Table 4[a]
Senegal: Main agricultural projects EDF 4 and 5 (1,000 ECU)

Title of action	Decided Year	Decided Amount	Paid	Percent paid[a]
		(Situation April 1988)		
EDF 4 (1976-80)				
• Continuation Cotton	1976	6,538	5,660	86.5
• Confectionary Groundnuts	1976	4,040	4,040	100.0
• Micro Projects	1977	340	316	92.8
Fruit Production	1977	4,563	4,563	100.0
Hydro-geological Study	1978	988	988	100.0
Exceptional Aid	1978	3,673	3,673	100.0
Continuation Livestock	1980	2,963	2,963	100.0
• Village Irrigation Podor	1982	480	453	94.2
Total		23,585	22,656	96.1
EDF 5 (1981-85)				
• Village Irrigation Podor	1982	6,620	4,307	65.1
• Micro Projects (7 programs)	1981	4,310	3,257	75.5
• Cereals Production E. Senegal	1982	4,680	3,387	72.3
• Dams on Senegal River	1982	10,300	5,505	53.4
Gum Tree Planting	1982	2,450	2,194	89.5
Drilling of Wells	1983	2,300	2,293	99.6
Continuation Livestock	1982	692	692	100.0
Vegetable Production Thies	1983	2,250	1,121	49.8
Livestock Relief Operation	1984	797	797	100.0
Emergency Drought Victims	1984	2,000	2,000	100.0
Coastal Fisheries Casamance	1986	1,600	0	0
Total		37,999	25,553	67.2

[a] Amount paid (or disbursed) as a percentage of the amount decided ("primary" commitment).

Annex Table 5[a]
Tanzania: Main agricultural projects EDF 4 and 5 (1,000 ECU)

Title of action	Decided Year	Decided Amount	Paid	Percent paid[a]
		(Situation April 1988)		
EDF 4 (1976-80)				
• Coffee Improvement Program	1977	12,572	12,572	100.0
• Agricultural Development Iringa (I)	1977	6,593	6,593	100.0
Morogoro Canvas Mill (grant)	1977	14,900	14,900	100.0
Morogoro Canvas Mill (risk capital)	1977	4,900	4,900	100.0
Kiltex-Arusha Textile Mill	1978	6,550	6,229	95.1
Total		45,515	45,194	99.3
EDF 5 (1981-85)				
• Agricultural Dev. Iringa (II)	1982	19,325	18,559	96.0
Morogoro Canvas Mill	1982	2,500	2,500	100.0
• Coffee Development Program (I)	1982	13,500	12,839	95.1
Training Irrigation Engineers	1982	920	815	88.6
• Micro Projects (2 programs)	1983	1,500	954	63.6
• Coffee Development Program (II)	1984	9,500	8,308	87.4
Rinderpest Control	1984	1,400	1,305	93.1
Morogoro Canvas (risk capital)	1984	3,500	3,500	100.0
Morogoro Canvas Mill Management	1984	2,200	2,200	100.0
Banana Improvement	1985	3,000	211	7.0
Cooperative Rural Development Bank	1986	3,150	409	12.9
Total		60,495	51,600	85.3

[a] Amount paid (or disbursed) as a percentage of the amount decided ("primary" commitment).

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Chapter 6

French Economic Cooperation with Senegal and Cameroon: Rural Development from Independence to the Present

CLAUDE FREUD

Acronyms

BCEOM:	Bureau Central des Equipements d'Outre-Mer (Overseas Plant)
BDPA:	Bureau de Développement de la Production Agricole (Agricultural Production)
CCCE:	Caisse Centrale de Coopération Economique (Central Economic Cooperation Fund)
CCFOM:	Caisse Centrale de la France d'Outre-Mer (Overseas Territories Central Fund)
CFDT:	Compagnie Française de Développement des Fibres Textiles (Textile Fibers)
CPSP:	Caisse de Péréquation et de Stabilisation des Prix
FAC:	Fonds d'Aide et de Coopération (Aid and Cooperation Fund)
FIDES:	Fonds d'Investissements pour le Développement Economique et Social Des Territoires d'Outre-Mer (Overseas Territories Economic and Social Development Investment Fund)
IRAT:	Institut de Recherches Agronomiques Tropicales et des Cultures Vivrières (Tropical Agriculture Research)
IRCT:	Institut de Recherches du Coton et des Textiles Exotiques (Cotton and Exotic Textiles Research)
IRHO:	Institut de Recherches pour des Huiles et Oléagineux (Edible Oils and Oil Crops)
MIDEVIV:	Mission Interministerielle du Développement des Cultures Vivrières
NPA:	Nouvelle Politique Agricole (New Agricultural Policy)
ORSTOM:	Office de la Recherche Scientifique d'Outre-Mer (Overseas Scientific Research Institute)
SAED:	Société d'Aménagement et d'Exploitation des Terres du Delta (Delta Development and Operation Company)
SATEC:	Société d'Aide Technique et de Coopération (Technical Assistance and Cooperation)
SCET-AGRI:	Société Centrale pour l'Equipement du Territoire—Secteur Agricole (Equipment Development—Agriculture Section)
SEDES:	Société d'Etudes du Développement Economique et Social (Economic and Social Development)
SEMRY:	Société d'Expansion et de Modernisation de la Riziculture de Yagoua
SODECOTON:	Société de Développement du Coton du Cameroun
SODEFITEX:	Société de Développement des Fibres Textiles
SONAR:	Société Nationale d'Approvisionnement du Monde Rural
STN:	Société des Terres Neuves

Introduction

French assistance to the countries with which France has economic cooperation arrangements has a longer history than most aid relationships. The transition from a colonial system to independence was prepared for by a framework law that put in place a development plan financed by the colonial power. To implement this plan, the French government created a whole battery of instruments: FIDES, or *Fonds d'Investissements pour le Développement Economique et Social des Territoires d'Outre-Mer* (Overseas Territories Economic and Social Development Investment Fund); CCFOM, or *Caisse Centrale de la France d'Outre-Mer* (Overseas Territories Central Fund), a number of study and project companies,[1] and various research institutes.

As a result, at independence, all of these cooperation instruments, with their specialist staffs, were already in place. The changes in names marked this stage: The Overseas Territories Central Fund (CCFOM) became the *Caisse Centrale de Coopération Economique* (CCCE), or the Central Economic Cooperation Fund, the Overseas Territories Economic and Social Development Investment Fund became the *Fonds d'Aide et de Coopération* (FAC), or the Aid and Cooperation Fund—and the colonial administrators became technical advisers. The study and project companies and research institutes continued to operate as if nothing had changed, and it was not until the 1970s that the research institutions were nationalized and national study bureaus were created. Cooperation policy developed around two main themes:

(1) The training of local managers and supervisors to take over from technical assistance; and
(2) The installation of (a) productivity-enhancing projects, intended to permit the countries' economies to bear the shock of the fall in export product prices after the former French colonies became associated members of the European Community in the mid-1960s, and of (b) diversification projects to end dependence on a single export crop.

The very costly infrastructure investments were ceded to the European Development Fund (EDF).

Ministry of Cooperation aid was characterized by a high proportion of technical assistance (70 percent of lending). This technical assistance was not integrated into projects, but was provided at all levels of administrative life (teaching in secondary schools, technical advisers in ministries), often in executive or line positions. Thus the interventions by France often could be regarded as substitution rather than development activities.

Initially (1960-70), the Ministry of Cooperation was able to keep pace with its partners' requests for both technical assistance and project aid. This was not the case, however, from the 1970s onward. The ever increasing technical assistance burden (raising of salaries after 1968) and the ever-growing number of project requests compelled the Ministry of Cooperation to favor one over the other. It opted for technical assistance. The CCCE then took over responsibility for projects, particularly in agriculture—a sector in which it had not operated until then. The fact that the CCCE found it increasingly difficult to come up with bankable industrial projects was a contributing factor to this change.

The development model chosen was one that had succeeded in France itself following World War II: modernization through the adoption of leading-edge technologies. The model included a flexible planning framework and a free-trade environment. The objective was "welfare" (free education and health); the image was that of the European consumer society.

Francophone Africa[3] had chosen its camp—that of the Western World—and to prevent it from becoming a field of rivalry among foreign external interests, France entered into defense agreements, accompanied by military aid, with each of its partners. This community of interests would be sealed by the promotion of the cultural bond of the French language.

At the same time, however, the economic links between France and Africa were loosening. A withdrawal of French private capital has been taking place since independence. Trade with Africa has been declining steadily and now represents only 3 percent of France's external trade, compared with 30 percent in the 1950s. And while the level of French aid has been maintained in terms of volume in constant francs, the French share of total aid to the countries within its area of influence has fallen sharply—from over 75 percent before 1970 to less than 25 percent today.

As other donors appeared on the scene and became involved in various sectors, French aid shifted to fill gaps in other sectors. French aid is therefore regarded by its partners as aid that can be called upon to act as a catalyst for other external financing operations or to fill financing gaps. As a result, French aid sometimes does not finance certain sectors to which French funding agencies assign priority because financing is provided by other suppliers of funds; on the other hand, it sometimes finances non-priority activities because they provide continuity of the political links that have been forged between France and its former possessions. With its heavy emphasis on technical assistance, French aid can at best only be spread among all sectors of economic activity. Having lost its position of leadership, French aid very often finds itself giving way to the international organizations—not being in a position to recommend a different development policy that would cause other donors to withdraw when France in any event lacks the means to take their place.

The Ministry of Cooperation's rural development aid to Senegal accounts for 9 percent of all aid to that country. The efficiency of this 9 percent is not representative of that of all aid—particularly since these operations very often are not representative in themselves, in that they provide

support for operations financed by other sources of funds. Conversely, foreign aid as a whole finances all of the country's rural development investment. Thus evaluating rural development progress in Senegal amounts to evaluating the efficiency of foreign aid.

To try to find out which donor deserves credit for the success of a rural development project is no better than guesswork, since all large projects are cofinanced. Is it attributable to the quality of the personnel paid by French aid or to the sums expended in the rural areas by the project grants or loans (e.g., from IDA)? That raises the basic question of the fungibility of government receipts and consequently that of expenditures

This study is based on the evaluations of overall development in Senegal and Cameroon performed by the Ministry of Cooperation in Senegal and Cameroon between 1982 and 1985,[4] which related to the principal agricultural subsectors of the two countries: rice, cotton, groundnuts, millet, and maize in Senegal; and rice, cocoa, cotton, and food crops in Cameroon.

The set of projects studied covers the greater part of agricultural production in Senegal and Cameroon. This makes it possible to propose a synthesis covering not only the subsectors studied but also, on a more global level, development strategy and policies. This analysis will endeavor to show whether these newly independent countries have succeeded in their efforts to increase their productivity and diversify their agriculture. It should be noted from the very start that the projects examined are all built on the same model and implemented by the same project companies. Since most of these projects were the inheritors of colonial policies, or policies contemporaneous with independence, they are in essence extensions of earlier projects.

The format of these projects always is the same in three respects:

(a) *Productivity is to be raised by applying research gains.* The purpose of research is to furnish development operations and projects with plant material having the highest yield potential and adapted to natural conditions; to define optimum input utilization levels; and to develop technical packages. The most efficient technical innovations are tested on experimental stations and constitute the basis for extension messages disseminated by the projects.

Thus, the IRCT (Cotton and Exotic Textile Research Institute) has undertaken research in the areas of cotton genetics (new seed selection), agronomy, plant-health treatments and technology with the object of furnishing selected seed and a package of techniques adapted to each environment for this important commercial crop. This research has introduced new varieties that have made it possible to raise cotton ginning yields substantially (from about 28 percent in 1946 to about 40 percent today), to improve fiber quality (length, fineness, strength, elongation, color), and to raise potential yields greatly. The current norms of the various projects range from 1.5 to 2.0 tons per hectare, compared with some 300 kilograms per hectare in the postwar period.

Similarly, IRHO (Edible Oils and Oil Crops Research Institute) has set up testing stations for experimenting with the general research formulas for *oil seeds* in very different bioclimatic environments and on very different soils, and for proposing regional solutions. Varieties giving agronomic yields 20-25 percent higher than that of local grains and 23-30 percent higher oil production were available even before 1960. By 1960, two-thirds of seed used was selected seed.

In *groundnuts*, the innovations of animal traction and the use of fertilizer around 1965-68—capable of bringing immediate gains—met with great success, as did the use of the mechanical seeder (from then on, 43 percent of the area sown to groundnuts in Senegal was seeded mechanically). These innovations permitted substantial increases in area under cultivation. Yet groundnut yields evolved much more slowly. In manual cultivation, the average net yield rose from 700 kilograms per hectare before World War II to 800 kilograms per hectare after 1950, owing mainly to the dissemination of selected seed.

(b) *Extension: A system of continuous communication with the farmers is set up in order to disseminate technical messages.* Initially, the projects evolved toward operational units that were both very unwieldy (in some cotton projects, one extension agent for every fifty small farmers) and hierarchical, with several intermediate levels. This mode of organization led to the establishment of privileged relationships with a minority of the more dynamic small farmers.

To create an alternative to this narrowing down of extension activity, in the second phase (from about 1968 on) a new approach based on participation by the farmers was developed by channeling local extension services via the cooperatives. However, the same energetic farmers and notables appeared in the command posts of these institutions—so that the second approach produced the same results as the first.

(c) *The project is managed by a project implementation agency.* The agency is usually of French origin: SCET-AGRI (*Société Centrale pour l'Equipement du Territoire*) in the case of rice farming development works in the Senegal River Valley and the SEMRY (*Société d'Expansion et de Modernisation de la Riziculture de Yagoua*) rice project in Cameroon; SATEC (*Société d'Aide Technique et de Coopération*) for groundnuts in Senegal; and CFDT (*Compagnie Française de Développement des Fibres Textiles*) for cotton projects in Senegal and Cameroon. These companies participate in the overall organization of the subsector from the stages of extension and dissemination to those of processing, marketing, and, in the case of cotton, export. They are amply provided with technical assistance staff, which ranges, depending on the project, from a staff of about 100 for cotton in Cameroon, to one of about 30 for the Cameroon rice project (pre-1985 figures), and of 40 for the Senegal rice project.

Senegal

Aid from France: Overview

Aid flows from the Ministry of Cooperation to Senegal averaged F 73 million annually over 1960-65, rising to F 450 million annually over 1980-85. In real terms, volume remained more or less constant at 80 million in constant 1960 CFAF. The share of rural development aid remained about the same—about 10 percent over this period.

Over 1960-65 the average composition of Ministry of Cooperation aid was: investment 30 percent, technical assistance 60 percent, and operating subsidies 10 percent. Over 1980-85, the average share of investment had fallen to 12 percent, while that of technical assistance had risen to 66 percent, and that of operating subsidies had doubled to 22 percent.

A look at total French aid to Senegal, including aid from other ministries and the CCCE (*Caisse Centrale de Coopération Economique*), shows that net CCCE aid, which was negligible in the 1960s, has become significant in the 1980s and now accounts for roughly half as much as the aid provided by the Ministry of Cooperation. Thus, at the present time, two-thirds of total French aid to Senegal is in the form of grants and one-third in loans, whereas at the time of independence nearly all of it was in the form of grants.

Investment, including CCCE projects, represents 40 percent of total aid flows with rural development aid accounting for 25 percent.

Characteristics of French Aid in 1985

Erosion and dispersion of project grants supported by the Ministry of Cooperation. Apart from the project in support of the *Société d'Aménagement et d'Exploitation des Terres du Delta* (SAED), which amounted to F 11 million, only one operation reached F 5 million; the others rarely exceeded F 2 million. The grants approved in 1985 were in fact merely to permit the continuation of existing projects, indicating a gradual shift out of grant investment aid in favor of CCCE loan assistance, which is six times as large on average over 1980-85.

Decrease in technical assistance. The French-Senegalese Ministerial Committee decided in 1985 to continue the process begun in 1980 (involving 500 teachers and 250 technical assistants) of cutting the number of French aid personnel by 1989 by half—from 1,500 to 750. Advantage will be taken of this adjustment phase to revitalize the plan for nationals to fill many technical assistance posts and for the redirection of the technical assistance that remains toward more advisory roles.

In 1985, the cost of technical assistance (F 300 million) remained practically unchanged from the previous three years because the staff cutbacks were offset to a significant degree by increases in salaries and related costs.

Significant increase in financial aid. Financial aid reached a peak of roughly F 700 million in 1985—owing to the combination of an adjustment loan of F 200 million by CCCE; a grant of F 40 million from the French Treasury; a budget subsidy of F 100 million granted at the end of the year, and, in particular, a Paris Club rescheduling operation of F 370 million.

This large-scale contribution from France enabled Senegal to meet the performance criteria prescribed under the current IMF stand-by agreement by the December 31, 1985, deadline and to achieve a (fragile) balance in its public finances. But this commitment was undertaken to the detriment of financing for productive projects that could launch an economic recovery. The French government has proposed remedying this by involving French private or

Table 1
Senegal: French aid, 1960-1985, net disbursements
(F thousands, current and constant as shown, and percentages)

	1960	1965	1970	1975	1980	1985	1985 (in constant 1960 Francs)
1. Ministry of Cooperation							
Investment Aid (IA)	27,200	4,000	21,700	16,500	21,900	64,400	9,900
Of which percent for rural development	18%	8%	28%	70%	25%	48%	
IA as share of total Ministry of Cooperation aid	48%	5%	25%	8%	6%	12%	
Technical Assistance (TA)	30,000	55,000	47,000	109,000	254,600	295,700	45,500
Of which percent for rural development	n.a.	n.a.	n.a.	2%	3%	4%	
TA as share of total Ministry of Cooperation aid	52%	76%	53%	53%	67%	57%	
Operating Aid (OA) (including Financial assistance)	n.a.	13,700	19,900	73,700	96,300	161,700	24,900
Of which percent for rural development	n.a.	n.a.	35%	23%	27%	n.a.	
OA as share of total Ministry of Cooperation aid	n.a.	19%	22%	36%	26%	31%	
Total Ministry of Cooperation Aid	57,200	72,700	88,600	203,800	377,600	521,800	80,300
Of which percent for rural development	10%	2%	16%	14%	9%	9%	
2. Other Ministries[1]	n.a.	76,800	12,200	19,200	18,700	167,000	25,700
3. CCCE	n.a.	9,400	10,800	3,300	388,500	255,300	39,300
Percent for Rural Development	n.a.	1%	13%	49%	26%	66%	
TOTAL AID (1 + 2 + 3)	57,200	158,900	111,600	226,300	784,800	944,100	145,300
Of which percent for rural development	10%	2%	14%	14%	18%	27%	

[1] Ministry of Education, Ministry of Finance, etc

Source: Claude Freud, 25 ans de cooperation en chiffres. Ministere de la Cooperation, 1985.

public enterprises in the investment effort through a joint investment fund.

Evaluation of Rural Development

The analysis of production results will focus on four main topics: (a) the physical results observed; (b) the production conditions that explain the physical results; (c) the behavior of farmers in choosing crops in response to incentives; and (d) the development policies implemented by the Senegalese government to improve rural living conditions.

Agricultural Production Trends

Groundnut production continues to be very much at the mercy of fluctuations in the climate and is no higher than the level attained twenty or twenty-five years ago. Yields are stable or diminishing, and area under cultivation is falling slightly, owing to the increase in food grain, which in turn is linked almost entirely to home consumption in rural areas.

Cotton production, which reached 41,000 tons in 1981/82 under an area of 32,000 hectares, with an exceptional yield of 1,280 kilograms per hectare, fell back to 28,000 tons in 1985.

For rainfed crops in general, yields, areas under cultivation, and production volume have scarcely increased in ten years—an indication that the functioning of the production system has not improved, and that productivity remains low and at the mercy of the climate. The only change worthy of note seems to be some development in food grains at the expense of groundnut farming.

Over the last twenty years, production of paddy rice in Senegal has varied between 100,000 and 140,000 tons (between 60,000 and 105,000 tons of hulled rice), while imports of hulled rice, which were about 200,000 tons a year between 1970 and 1979, have reached 360,000 tons per year since 1980. Bottomland rice production, under a project supervised by the Textile Fibers Development Company SODEFITEX (*Société de Développement des Fibres Textiles*), is now only 3,000 tons of paddy rice. Production in the Senegal River Valley irrigation schemes has reached 70,000 tons of paddy, while traditional rice production in the lower Casamance has plummeted.

Although Senegal River area production has increased now that total water control has been achieved, it remains lower than had been hoped. One of the goals of rice farming along the Senegal River has been to sell rice to the towns, and this goal has not been achieved: Only 10,000 tons of paddy is being sold to the Delta Development and Operation Company (SAED). The village project areas consume almost all their production themselves.

In conclusion, the production figures, while not disastrous, are disappointing. The following sections attempt to identify the reasons for the relative failure of the projects and to assess its economic consequences. A review of the prevalent production conditions explains the physical results obtained and their trend over time.[5] The influence of the various factors of production varies according to the subsector.

Production Conditions

Climatic uncertainties. Rainfall plays a crucial role in rainfed cotton, groundnut, and grain farming. Generally speaking, yields and production are good when rainfall is high (1978/79 and 1981/82) and poor when it is low (1977/78, 1979/80, and 1980/81). In the case of cotton, it should be added that parasite activity has been low in recent years except for 1978/79, which explains the poor yields in that crop year.

In the case of irrigated rice, climatic fluctuations should have little effect, since the land area is under total water control. In fact, however, poor water management and inadequate maintenance of the irrigation network and pumping stations are creating a new risk. As a result, 40 percent of the improved area is not cultivated; only 80 percent of the crop on the cultivated area is harvested; and there is relatively little double cropping (70 percent utilization of equipped areas in the Delta and the Middle Valley, and 120 percent in the village schemes—giving 80 percent for the schemes as a whole, compared with a possible 150 percent).[6]

Seed availability and quality. In the cases of cotton and rice seed seems to present no problem in terms of either quantity (about 1,000 tons needed annually for each crop) or quality. For groundnuts, the seed program has guaranteed distribution of a sufficient quantity of seed, i.e., 120,000 tons a year, even in poor years. With regard to the quality of the groundnut seed, success is less clear. Only 50 percent of the seed distributed is selected seed, and it appears that in some regions, such as Sine-Saloum, the varieties used do not allow for adequate adaptation to fluctuations in the climate.

Technical messages. In groundnut cultivation, technical messages relating to extensive cultivation—selected seed, sowing date, chemical fertilizers and treatments, and animal traction—have been disseminated successfully. Farmers seem to have a good technical grasp, and failures are due mainly to project management constraints. For example, some projects have been abandoned recently owing to budget austerity. Fertilizer deliveries have fallen sharply as a result of elimination or reduction of government aid, and deliveries of animal traction equipment have ceased altogether as a result of the abolition of agricultural credit in 1979. With regard to fertilizer, due to the elimination of government subsidies, barely 30,000 tons was used for groundnuts, millet, and sorghum in 1981/82, and less than 10,000 tons in 1982/83, compared to 100,000 tons a few years earlier. This drastic fall has not brought about any spectacular reduction in yields. Is this because the fertilizer formula is unsuitable and causes soil acidification? Is it because—in an area with poor rainfall—the effects of the fertilizer are not always apparent? Research is needed to answer these questions, but there is reason for concern about the future trend of soil fertility, since the soils are often overused and not allowed to lie fallow.

Moreover, in the groundnut growing area, while these extensive cultivation technical messages have met with obvious success, more complex production-intensification messages seem to have failed—particularly those dealing with soil fertility maintenance (such as deep phosphating, plowing in organic matter, organic fertilization, cropping patterns that permit high-density cultivation, reforestation with acacia albida). This failure is mainly due to a poor grasp of the economic constraints on farmers, who have no resources available to invest.

One can therefore say that in groundnut cultivation an almost total impasse has been reached. Inputs other than seed are no longer distributed; intensification messages are rejected by the farmers; use of animal traction is obstructed; and capital is shrinking rapidly following the suspension of agricultural credit, which had enabled the farmers to purchase equipment. The situation may become

catastrophic unless the supply of animal traction equipment is renewed—for it must not be forgotten that this equipment makes it possible to sow groundnut and grain seed rapidly and at the optimum date—after lightly working the soil to ensure better utilization of rain, which is always scarce in groundnut areas. Furthermore, the use of animal traction for certain operations (groundnut seeders and harvesters) can to some extent offset the loss of manpower due to the emigration of large numbers of young people.[7]

In the cotton area and in the rice area along the Senegal River, the situation is less serious than in the groundnut area. The *Société de Développement des Fibres Textiles* (SODEFITEX) and the *Société d'Aménagement et d'Exploitation des Terres du Delta* (SAED) have continued to deliver fertilizer and pesticides, which are particularly cost-effective in the well-watered cotton areas and in the irrigation schemes. SODEFITEX was also able to deliver animal traction equipment in 1982, and the rice farmers along the Senegal River have benefited from the cultivation work done by SAED equipment—these activities being financed by aid projects. In the cotton and rice subsectors, therefore, the outreach activities and technical channels are not called into question, as they are in the case of groundnuts. In these subsectors, then—because the technical messages offered do in fact produce good agronomic results—the problems are, at least in the short term, more economic than technical in nature, or related to management (to SAED's efficiency in water management or in the plowing and threshing service).

Choice of Farming Activities and Producer Prices

The behavior of farmers in the three subsectors is remarkably stable. In the groundnut area, since under the present socioeconomic circumstances farmers have little choice in the crops they grow, the area sown varies little, with between 1 million and 1.2 million hectares seeded to groundnuts annually. This low elasticity of area seeded to production conditions is due to the fact that, out of a cultivable area of about 2 million hectares, 1 million is devoted to millet, 90 percent of which is consumed on the farm. In this ecological region, millet and groundnuts are the only alternatives, since rainfall is too low to grow cotton or maize. It is only when rainfall is poor, or in the year following a bad harvest, that an increase takes place in areas planted to millet—the maximum increase being 200,000 hectares; in these circumstances groundnut cultivation is reduced, for manpower and land shortages keep total area under cultivation practically constant from year to year. The fact must be stressed—although it is not universally recognized—that groundnut cultivation does not jeopardize the food equilibrium of rural populations in the Groundnut Basin, except when there is an exceptional drought.

In the South, the percentage of area under cotton is small in comparison with that under other crops:[8] 11 percent in Eastern Senegal and 13 percent in upper Casamance, compared with about 50 percent for food grains and more than 35 percent for groundnuts. Thus here, too, the room for maneuver remains small, and in general, as in the case of groundnuts, the total area under cultivation increases very little. The choice between cotton and groundnuts remains fairly stable. The farmers generally try to maintain diversified production that minimizes risk and optimizes use of factors of production—particularly since there is no significant difference between cotton and groundnuts or rice in terms of monetary incentives.

Study of small farmer production systems shows that in the Senegal River Valley, rainfed crops and stockraising are still very important activities and employ more than half the work force. In the Upper Valley of the Senegal River, emigration and workers' remittances make possible the payment of wages and inputs in the village schemes to obtain rice to provide food security for households. Generally speaking, labor constraints remain substantial—despite the use of seasonal workers and recourse to SAED for a number of cultivation tasks, particularly in the large schemes. As a result, considerable difficulty is experienced in maintaining the schemes and ensuring appropriate production conditions. For these reasons, and also for technical reasons relating to the establishment of irrigation infrastructure, areas under cultivation are not increasing significantly and remain stable at around 20,000 hectares. The important fact is not so much an increase in area as the transition to total water control that has been achieved under the projects.

As for *producer prices*, their influence varies fairly widely across products and therefore subsectors. As discussed above, farmers' choices of rainfed crops are limited, so that unless radical changes occur in the price systems, no major changes are to be expected in choices between crops. Groundnuts will continue to be grown on 1 million hectares, as will food grains, and cotton will probably not exceed the 60,000 hectare long-term projection unless world cotton prices are much more favorable than groundnut prices, making it possible to grant a very attractive cotton producer price. Barring this, the only effect of manipulating producer prices would probably be to boost groundnut sales on the parallel market, as happened in 1980/81, if official prices are too low in comparison with parallel market prices.

On the other hand, it is quite clear that if a new policy were adopted allowing true commercialization of food grains at an attractive producer price, their share would increase substantially. The combination of the commercial and the food aspects would constitute a decisive advantage in terms of the strategy of the farmers—always aimed at minimizing risk. At present, there is very little marketing of grains such as millet, sorghum, and maize, and the official grain purchase price can be described as meaningless, as there is no supply at that price.

Moreover, the expansion of export crops such as groundnuts or cotton has its limits. While the historical trend has led to this preference for commercial crops—with Senegal's towns buying imported rice and wheat at low prices—it seems out of the question for farmers to abandon grain-growing for subsistence needs at a time when the export price of groundnuts or cotton is stagnating or falling. Because of both food security concerns and trends in terms of trade, therefore, it seems that rainfed food grain production cannot decrease in the future.[9]

With regard to irrigated rice, it seems clear that the purchase price of paddy has no effect on the quantities marketed, as the areas allocated to it barely suffice to supply on-farm consumption needs.

Senegal's Sectoral and Development Policies

The three crops studied are produced with scarce resources that must be put to the best possible use: (a) factors of production (land, water, inputs, labor); and (b) macroeconomic resources (foreign exchange, public savings, foreign debt). Moreover, these three crop subsectors contribute to the goals of various policies and of development strategy more generally: to supplying foodstuffs to urban centers,

through the increase and regularization of domestic grain production; to fueling the national economy through agricultural-sector purchases and the value added created; to furthering regional development planning through judicious siting of agricultural development projects; and, in general, to improving rural living conditions and selecting activities that optimize the use of scarce resources. The role of the three subsectors in the implementation of these various policies will now be examined.

First of all, as regards the *regional impact of projects*, groundnuts supply most of the agricultural monetary income of Senegalese farmers virtually throughout the country, even in the cotton growing area. Groundnuts thus play a considerable role in animating the rural economy. In a "normal" year groundnuts provide CFAF 45-50 billion in monetary income to producers[10]—twenty times as much as cotton and 150 times as much as rice. Hence, abandoning groundnut cultivation is at present tantamount to eliminating rural monetary trade. The role of cotton is that of a supplemental source of income, sometimes substantial in some areas where cotton may be the principal source of cash. Rice growing makes it possible (admittedly at a very high cost) to ensure the food security of the Senegal River populations, particularly in years of poor rainfall. The Senegal River schemes thus mainly serve to make production for home consumption secure—whereas one of the goals was to market rice in the towns.

This goal of supplying food to the towns is in fact impossible to achieve at present, not only for the technical reasons already noted, but also for economic reasons. This leads to an examination of the questions of *food strategy* and *agricultural policy choices* in Senegal. It is clear that in the past a three-part strategic choice has been made—although it has not always been spelled out as such: (1) Groundnut cultivation furnishes income to the farmers, revenue to the government, and foreign exchange to the country; (2) The farmers provide their own subsistence needs in grain; (3) Urban consumers buy imported broken rice at low prices. This situation is ideal, given the high world prices of groundnut products and the low price of imported broken rice: Transportation and marketing costs make the purchase of imported rice by farmers or of local grain by town-dwellers economically unattractive.

This development model has produced the expected results, particularly the near-disappearance of the consumption of millet, sorghum, and maize in the towns. Barely 10,000 tons of millet has been marketed through official channels in recent years (and that mainly on account of substantial subsidies), while more than 320,000 tons of broken rice and 118,000 tons of wheat is imported annually (not counting food aid).

In recent years, a fundamental change has emerged in world commodity markets: the price of groundnut products has been falling, bringing it more and more into line with competitive fatty substances such as soybeans and sunflower seed. In spite of this, from the point of view of the national economy, there continues to be no advantage to producing millet, sorghum, or maize to replace imported broken rice on the urban market. Thus, the consumer price of broken rice is CFAF 160 per kilogram. Although unprocessed millet can be purchased at CFAF 70 per kilogram, millet flour costs the consumer in Dakar CFAF 180 per kilogram.[11] This high price includes transportation, marketing, and milling costs. The consumer price for broken maize would also be around CFAF 160 per kilogram.[12] Consumer

Table 2
Cost of domestically consumed foodgrains, (CFAF/kilograms)

	Millet	Maize	SAED Rice	Imported Rice
Producer price or import price	70	70	85	45
Primary collection or miscellaneous forwarding costs	30	30	n.a.	15
Transportation to place of consumption	25	25	n.a.	n.a.
Cost of processing	40	20	n.a.	n.a.
Cost of finished product	165	145	n.a.	60
Wholesale retail mark-up	15	15	n.a.	15
Retail Price (at full cost), Dakar	180	160	265	75
Actual consumer price (net of tax or subsidy)	160	160	160	160
CPSP margin tax (+) or subsidy (-)	-20	0	-105	+85

Source: Pierre Quenevin, "Synthese des Evaluations Riz-Coton-Arachides au Senegal" (Paris: Ministere des Relations Exterieures, Cooperation et Developpement Caisse Centrale de Cooperation Economique, Decembre 1982). Reactualised with 1986 prices (c.f.).

prices for domestically grown millet and maize are thus, respectively, even higher than or the same as the price of imported rice; to replace rice, they would probably have to be 20-30 percent lower. Increasing the consumer price of rice is politically explosive and severely penalizes the underprivileged urban classes.

If it is virtually impossible to sell rainfed millet or maize in the towns at present, the same is true of irrigated rice from the Senegal River area, since marketed production is low and is consumed within that region. The cost price of SAED rice is about CFAF 250 per kilogram.[13] This high price is due to the fact that (a) double cropping has not yet come about, owing to the length of the rice cycle, and (b) that pumping costs are particularly high because almost all the water is supplied by pumping (as rainfall is only 0.3 meters per year). The substitution of irrigated SAED rice for imported rice therefore cannot be justified economically.

The choice of creating irrigated rice project areas is a regional development policy decision and may be justified in the long term—provided that SAED's costs are stabilized, that maintenance costs are reduced, and that production is increased with two crop cycles on 100 percent of the equipped areas (once the Diama dam is completed). It must also be noted that with recurrent costs so high, and with the Senegalese budget so heavily in deficit, there appears to be no solution within Senegal for the repayment of the loans taken out for the capital costs of these investments (including project areas, dikes, and dams), the costs of which are not even included in the calculations presented here.

It has to be borne in mind that in the medium term, any initiative in the Senegal River Valley must be financed by external resources, as neither the government nor the farmers are in a position to pay for the current operating costs—let alone repayment obligations on the investments. Ten years ago, groundnuts and cotton brought to the budget of the state CFAF 30 billion in direct and indirect revenue or revenue induced by wage-earners' and farmers' consumption. Since 1981, the agricultural sector as a whole has presented a negative balance sheet for the government.

Meanwhile, government expenditure has more than doubled in ten years, to over CFAF 200 billion. The loss of agricultural revenue is extremely serious for the government; since it cannot increase the burden on farmers, whose purchasing power is stagnant or even declining, it has no choice but to go heavily into debt.

Aware of the current impasse, the Senegalese authorities have instituted the New Agricultural Policy (*Nouvelle Politique Agricole*—NPA), designed to redress the rural situation. The NPA forms an integral part of the medium- and long-term adjustment program (1985-92), which was the subject of the general economic policy declaration of the Government of the Republic of Senegal in October 1984. The main provisions of the NPA are as follows:

—Reorganization of rural life, hinging on the setting up at the grassroots level of "village sections" and "producer groups";
—Withdrawal by the government from the project companies within five years (starting with the abolition of SONAR (*Société Nationale d'Approvisionnement du Monde Rural*) and STN (*Société des Terres Neuves*) in 1985) and entry by the private (or semi-private) sector into a number of fields;
—A new policy concerning inputs, particularly for groundnut seed and fertilizers;
—A food grain policy based on incentive prices aimed at "food self-sufficiency" and the raising of production levels; and
—A long-term policy for the conservation of the natural environment, soil regeneration, reforestation, and combatting desertification.

While the NPA affirms a number of generally positive approaches, it also underscores important unresolved problems. The specific, restrictive context in which the NPA was drawn up bears restating. Increasingly higher costs—both to society at large and to government—of agricultural sector activities are a part of this context; there is no short-term hope of redressing this problem owing to the deterioration of agriculture (soil exhaustion, deterioration in terms of trade, and drought) and of inappropriate implementing structures (cooperatives, regional development companies, CPSP—*Caisse de Péréquation et de Stabilisation des Prix*). Further complicating the situation are pressures from donors, chiefly the IMF; these are aimed basically at reducing costs in the short term, but they encourage neither the recovery of production nor consistency of long-term goals. Finally, there is no consensus (either internally or among the various donors) concerning the recovery measures to be taken. This lack of a consensus applies not only to technical issues (such as whether priority should be given to irrigation or to rainfed crops, the returns to fertilizer use on different crops, and so on) but also to socioeconomic issues (income distribution, price policy, or the interests of the various pressure groups—CPSP, religious sects, oil and sugar manufacturers, and staff of the regional development companies).

The NPA can consequently only be a compromise characterized by contradictions to satisfy conflicting opinions or interests, refusal to choose between certain options, and omissions. Some of these could be resolved through the implementing provisions while others first require that choices be made and contradictions be resolved.

Broadly speaking, the general goals of the NPA merit support—subject to the reservations enumerated and discussed below.

1. Rural reorganization designed to place greater responsibility on the producers and to phase out the supervisory companies (sociétés d'encadrement) is a courageous and positive decision. However, doubts may be felt regarding the establishment of the "village sections" and "producer groups." The haste with which the 4,472 village sections were set up and the constraints placed on their organization (including minimum membership levels) may justify the fear that the root causes of the failure of the cooperatives have not been eliminated. This is all the more worrying in that a new failure would jeopardize the setting up of producer organizations for several years to come—and consequently also the restoration of agricultural credit, one of the key elements of the NPA.

2. With the phasing out of the regional development companies, little has been done to ensure that other bodies will assume the functions necessary for agricultural development (technical messages, information systems, extension, research and development, plant health control, and anti-desertification measures). These functions, which were poorly performed by the regional development companies, appear likely to be abandoned altogether.

3. The food grains policy linked with the goal of food self-sufficiency needs clarification. The current structural grain deficit, around 500,000 tons per year, can at best be made up only in the very long term. The self-sufficiency goal thus seems to have no operational validity in the medium term. It would probably be better to set medium-term goals that recognize the present constraints.

4. The decision taken to increase per annum the area developed for irrigation in the Senegal River Valley from 2,000-3,000 hectares to 5,000 hectares should be examined more closely to verify its feasibility. With regard to financing, will it be possible to raise the CFAF 10-20 billion a year required to carry out the investments? What will be the impact on the finances of the various operators (government, SAED, and producers)? What will be the final cost of the outputs (paddy and vegetables)?

5. Finally, the grains policy must be a *global policy* that addresses every aspect of the sector: production (rice, millet, maize), imports (broken rice, wheat), and relative prices. With regard to physical resources, does the SAED possess the capacity to carry out this enormous program? Are the communities involved ready to adapt to this new pace, this new mode of production? The outlook for maize seems promising, as regards production, processing, and consumption. This is undoubtedly a window to be exploited, even if major effects can be expected only in the long term.

Financing of the NPA and the price policy it implies (input, output, and consumer prices) are closely interlinked. Yet the NPA itself scarcely touches on this topic. The fact is that a policy of market prices for inputs (including investment) and incentive prices for producers with administratively set floors would shift the burden of financing to the consumer. Is this the course chosen? Consistency among prices has not yet been studied. Moreover, the amounts and methods of financing of the measures advocated by the NPA are scarcely outlined, and urban-rural trade-offs have not been discussed.[14]

Cameroon

Unlike Senegal, a country poor in agricultural potential and severely limited in its choice of crops by the lack of rainfall. Cameroon is a highly diversified country with good rainfall and therefore good potential for the substantial expansion of agricultural production.

Cameroon's experience is unique in two ways: It set up a Rural Development Ministry very late (in 1973), and it finances half its rural development investments out of its own resources.

This relative newness of its institutions largely explains the difficulty of retracing the rural development policy of the Cameroonian authorities. The fact that they finance the better part of their projects makes them extremely reluctant to disseminate information to third parties, which does not facilitate the analyst's task. For these reasons, the analysis of Cameroon in this chapter goes into less depth than that of Senegal. This paper will pass over the coffee, palm oil, rubber, and banana subsectors and focus on rice, cocoa, and cotton. This will permit comparison with Senegal in terms of identical products (rice and cotton) and of a low-density crop: cocoa and groundnuts.

Aid from France: Overview

If we compare annual averages for 1960-65 and 1980-85, Ministry of Cooperation aid flows to Cameroon tripled in nominal terms, but fell by 50 percent in real terms. The share of rural development aid remained stable around 10 percent.

Over 1960-65, the average composition of Ministry of Cooperation aid was: investment, 45 percent; technical assistance, 33 percent; and operating subsidies 22 percent. Twenty years later, the share of investment had fallen to about 15 percent, that of technical assistance had risen to over 80 percent and that of operating subsidies had fallen to only 5 percent.

Looking at total French aid to Cameroon, including aid from other ministries and the CCCE (*Caisse Centrale de Coopération Economique*), it is evident that CCCE aid (negative in the 1960s) is now about equal to Ministry of Cooperation aid. The composition of total French aid is now half grants and half loans, whereas at the time of independence it consisted entirely of grants. Investment, including CCCE projects, represents nearly 50 percent of total aid flows, with rural development aid accounting for 20 percent.

Characteristics of French Aid in 1986

French aid to Cameroon takes three forms, discussed in turn below:

Technical assistance and training fellowships in France. The technical assistance furnished to Cameroon has declined from 627 technical assistants in 1973 to 528 in 1986. This is still largely a substitution type of aid. However, that is the form in which the Cameroonian authorities wish to receive it. From France's own point of view, this technical assistance is an important factor in its role in the Cameroonian economy. Cameroonian students constitute the largest Sub-Saharan African community training in France.

Diversification of domestic production. FAC (Aid and Cooperation Fund) and CCCE have a number of diversification projects: rice farming in northern Cameroon and the Noun Valley, development of the cocoa area, promotion of soybean cultivation, and development of the cotton area.

Participation—in the form of a mix of FAC subsidies and CCCE loans—in major telecommunications, energy, and transportation infrastructure works being undertaken by Cameroon. Examples are Yaoundé access roads, the Trans-

Table 3
Cameroon: French aid, 1960-1985, net disbursements[1]
(F thousands, current and constant as shown, and percentages)

	1961	1965	1970	1975	1980	1985	1985 (in Constant 1961 Francs)
1. Ministry of Cooperation							
Investment Aid (IA)	48,100	39,800	34,600	39,100	45,900	29,900	5,000
Of which percent for rural development	23%	8%	10%	4%	28%	43%	
IA as share of total Ministry of Cooperation aid	65%	47%	46%	28%	23%	13%	
Technical Assistance (TA)	24,000	34,000	34,000	69,600	125,000	183,200	30,500
Of which percent for rural development	n.a.	n.a.	4%	3%	4%	9%	
TA as share of total Ministry of Cooperation aid	33%	40%	45%	50%	62%	81%	
Operating Aid (OA) including Financial Assistance	1,400	11,200	13,500	25,800	31,500	13,500	2,200
Of which percent for rural development	n.a.	n.a.	34%	33%	23%	8%	
OA as share of total Ministry of Cooperation aid	2%	13%	18%	19%	15%	6%	
Total Ministry of Cooperation Aid	73,500	85,700	75,200	133,900	202,600	226,600	39,500
Of which percent for rural development	16%	6%	13%	9%	12%	13%	
2. Other Ministries[2]	10,200	n.a.	n.a.	6,400	4,100	122,000	20,300
3. CCCE	-10,000	-22,300	19,600	6,400	312,400	228,000	38,000
Percent for rural development	n.a.	n.a.	n.a.	24%	7%	32%	
TOTAL AID (1+2+3)	73,700	62,700	94,800	151,700	519,100	576,600	97,800
Of which percent for rural development	16%	9%	10%	9%	9%	20%	

[1] Not including guarantees
[2] Ministry of Education, Ministry of Finance, etc.
Source: Claude Freud, 25 ans de Cooperation en chiffres. Ministere de la Cooperation, 1985.

Cameroonian Railroad, satellite telecommunications, television, and hydroelectric plant and water supply facilities. This participation in the expansion of the Cameroonian economy reflects France's "bet" (before the oil crisis) on the development of Cameroon, which was to replace Côte d'Ivoire in terms of economic dynamism and was therefore designed to enable French enterprises to share in that success.

Evaluation of Rural Development

Contribution of Agriculture to the Cameroonian Economy

Agriculture occupies a key place in the Cameroonian economy. It employs directly or indirectly nearly three-fourths of the population, even though its share in GDP fell from 40 percent in 1960 to 20 percent in 1985. Prior to 1980, agriculture contributed the largest share of exports—close to 75 percent. Since the rise in oil production, its share of exports, accounted for mostly by coffee and cocoa, has fallen to 27 percent, and it has been displaced by oil as the leading source of foreign exchange earnings. It is still, however, an important contributor, taking into account import substitution (rice, sugar, millet).

Until 1980, export crops furnished 40 percent of government revenue. Although the advent of oil income has since reduced agriculture's share, it continues to be a source of revenue and one that will be appreciated all the more as oil income diminishes.

Agriculture's Modern Sector

Cameroon's agriculture continues to be characterized by a dual productive system: on the one hand, the great mass of traditional small farmers, and on the other, a "modern" sector oriented toward agro-food, in which the weight of the public sector is decisive.

Even though the modern sector contributes only 10 percent to agricultural output, it gets priority, receiving nearly two-thirds of agricultural financing under the Fourth Plan. It is on the modern sector that this study focuses, since it is the one that has benefited from external financing and is the barometer of the Cameroonian government's development intentions. The following sections review the principal projects—cotton, cocoa, and rice—and evaluate their impact on the economy.[15]

Cotton

Development of cotton growing. After a difficult start in the late 1920s (47 tons in 1931, 6 tons in 1936), cotton growing was launched on a large scale from the 1950s onward owing to the liberal course chosen—unlike what happened in Chad and the Central African Republic, where forced cultivation had been instituted. The French administration entrusted this task to the CFDT (*Compagnie Française de Développement des Fibres Textiles*), which from the outset modeled its operating principles on the activities carried out in the other countries of French Equatorial Africa, and rapidly demonstrated its efficiency, with very strict control of production, processing, and marketing activities.

In the initial phase, growth of production was mainly due to increases in area under cultivation. Average yields were low: around 400 kilograms per hectare. After reaching 100,000 hectares around 1966, area under cultivation stabilized owing to the scarcity of land. Cotton is still an itinerant crop that exhausts the soil and is therefore a very large consumer of arable land.

This situation compelled the CFDT to alter its action strategy by going over to high-density cultivation. The resulting figures were striking: yields reached 840 kilograms per hectare in 1969, and production rose from 41,000 tons in 1963 to 99,000 tons in 1970.

This success was due to the combined effect of several favorable factors. This was a period of good rainfall. Research had disseminated more productive varieties. Animal traction had developed (more than two-thirds of the land was tilled semi-mechanically), breaking the deadlock of the labor shortage. Above all, producers became enthusiastic about cotton, which brought them an ever increasing cash income.

It was then that drought triggered crisis. Yields fell back to 400 kilograms per hectare beginning in 1970, and in 1973 production collapsed to 28,000 tons—its 1960 level. But the drought was not the whole story. To the extent that it directly compelled farmers to expand the area under food crops (to limit the climatic risks), it operated to the detriment of cotton because of the scarcity of manpower and land. However, the decline in area under cotton was also due to a decrease in cotton receipts compared with food crops, whose prices soared, spurred by strong demand from neighboring Nigeria.

This crisis led to the spread of the cotton-growing area toward the South, where the climatic risks are less great, and it intensified the shift to intensive cultivation. In 1974, SODECOTON (*Société de Développement du Coton du Cameroun*) took over the activities of CFDT, to which it continues to be linked through its equity holdings and through technical and commercial assistance agreements. Intensive farming progressed rapidly to reach an average of 1.3 tons per hectare. It was based on the latest research gains—in particular on substantial increases in fertilization and anti-parasite treatments.

Cotton area and production both rose steadily, reaching 89,000 hectares and 115,000 tons in 1985/86. This spectacular recovery was apparently due to a number of factors:

—Efficient plant material, developed by research;
—Optimum use of fertilizer and anti-parasite treatments;
—A highly disciplined extension and supervision service, which supplied credit for the purchase of inputs only on condition that the farmer had carried out the recommended cultivation operations;
—Expansion of animal traction and even the beginnings of motorization in the south, where the prevalence of trypanosomiasis makes the use of animals impossible; and
—A very high producer price—averaging 40 percent higher than in other African countries.

Economic results.[16] The aggregate product of the cotton/textiles subsector is CFAF 38 billion, including national value added of CFAF 24 billion. Although the greater part of value added is created by the farmers, they receive only 25 percent of domestic revenue from the crops; cotton activities mainly benefit SODECOTON and textile industry wage-earners.

Cotton contributes only 1.5 percent of GDP. Its trade balance impact is positive: exports of CFAF 21 billion (3.2 percent of Cameroonian exports) for imports of CFAF 14.4 billion. This is made possible by a substantial state subsidy (CFAF 18 billion in 1985). The reason for this intolerably heavy subsidy burden on public finances is that in 1983, a year when the subsector broke even, producer prices rose 50 percent while export prices were halved.

Restructuring is in progress to lower the subsector's costs, with reduction of expatriate supervision by 50 percent and the farmers bearing 100 percent of input cost (currently subsidized by 40 percent). But much more will have to be done for the subsector to break even unless international cotton prices rise and/or producer prices fall.

Cocoa

Development of cocoa production. Cocoa production in Cameroon has been stagnant at barely over 110,000 tons since the 1960s. There would seem to be two causes for this: the producer price and the age of the cocoa trees.

Comparison of price trends in Cameroon and Côte d'Ivoire, where production has been rising sharply since 1960, shows that Cameroonian producer prices have averaged CFAF 50 per kilogram lower. Cameroon finally caught up with Côte d'Ivoire prices in 1977 and then exceeded them in 1980, when the Cameroon government, thanks to its oil receipts, was able to do without the cocoa levies. Until 1979, the producer price was less than 20 percent of the world price. Today, it is 50 percent, a ratio that still allows the state to make a profit.

Remunerative prices encourage growers to establish new plantations. Study of the age pyramids shows that the period 1960-77 was marked both by a low replanting rate and by a fall in producer prices in constant francs. Because of the production time lag of the cocoa tree, the impact of a low replanting rate on production is not felt until seven years later. The leveling-off of production from 1970 onward therefore can be explained by the low replanting rate.

On the other hand, a rise in producer prices has an immediate impact, as it encourages farmers to give greater attention to maintenance and to resume the operation of old plantations.

It is notable that the purchasing power of Cameroonian growers stagnated between 1960 and 1970, when world prices were such that producer prices could have been raised. It seems possible that this policy of low producer prices limited the replanting rate and led to the aging of the plantations and the stagnation of production.

Age of the cocoa trees. One of the major problems of cocoa growing continues to be the increasing age of both the farmers and the plantations. More than half the growers are over 50 years old, and two-thirds of the plantations are over 25 years old.

There are a number of reasons—some of them structural and interlinked—for this dual aging phenomenon:

—The magnitude of the flight from the land; and
—The deterioration in the profitability of cocoa growing due to the combined effect of an appreciable decline in producer prices in real terms and an expansion of brown rot.

Brown rot continues to be the major obstacle to the development of cocoa production in Cameroon. Improving anti-parasite measures is essential to the development of cocoa production. Yet the farmers are not at present applying the standards recommended by research because of serious manpower and equipment shortages. The result is very low-density cocoa farming—largely limited to pod-picking by retired people.

Economic results.[17] Cocoa production cost is CFAF 575 per kilogram of beans exported. This leaves the state with a profit even in the current situation of depressed world prices. Farmers' remuneration is the principal cost item, accounting for more than 50 percent of total cost.

In 1982/83, the value of cocoa production was CFAF 68 billion—equal to 5 percent of GDP. With export sales of CFAF 67 billion, cocoa accounts for 10 percent of Cameroon's exports. The included import cost is CFAF 13 billion, leaving a positive balance of CFAF 55 billion, equal to 25 percent of the trade balance figure. Cocoa thus yields a very good return to the state. A world bean price of CFAF 750 (the average rate in constant value over the last 15 years) would yield it a profit of CFAF 22 billion.

Extensive cultivation of cocoa a logical choice. The current situation continues to be characterized by the difficulties of transition to high-density planting. Moreover, as in Togo and Cote d'Ivoire, when the great majority of growers in Cameroon opt for extensive cultivation, they do so at an equivalent rate of profit (since in principle the loss rate due to brown rot is 50 percent); low-density planting of two hectares is probably less constraining to the farmer than high-density planting of one hectare.

Rice

Development of rice production. The first agricultural water resource improvements in northern Cameroon date from the years 1951-52. Until 1970, both activities and results remained modest: 6,000 hectares, with a paddy yield of the order of 1 ton per hectare.

In 1971, the government set up the Yagoua Rice Growing Expansion and Modernization Company (*Société d'Expansion et de Modernisation de la Riziculture de Yagoua*—SEMRY), which took over the previous development works and was entrusted with the development of 5,300 hectares.

SEMRY is responsible for the development of the scheme, which it maintains and manages. It carries out the land preparation work (mechanized tilling) and furnishes all services to the growers (seed, fertilizer, water supply, and extension). It also has a monopoly of paddy purchasing and milling. The farmers carry out planting, weeding, harvesting, and transportation of the paddy to the points of sale, where the levies are collected.

Since 1975, yields have averaged 4.5 tons per hectare per cycle. Farmers quickly made the transition to two growing cycles a year. This substantial improvement in yields is due to better water control and the general practice of transplanting. The introduction of transplanting, which was not provided for in the project, took place fortuitously and was immediately adopted by most of the rice farmers. It testifies to the ability of the farmers to incorporate even an exacting technique very quickly if they see that it offers an immediate return.

Between 1975 and 1985, the area developed multiplied threefold—from 4,500 to 13,100 hectares, and paddy production rose from 23,000 to 103,000 tons. Average yields henceforth ranked among the highest in Africa. Paddy production bought by SEMRY in 1985/86 covered nearly two-thirds of domestic rice demand, estimated at 90,000 tons (equivalent to 130,000 tons of paddy).

Economic results.[18] The value added created by SEMRY is about CFAF 10 billion. This is hardly representative of rice production at the national level, but it is roughly in line with the level of the northeastern region where the scheme is located.

Until 1985, however, 70 percent of rice sales took place on the external markets (chiefly Nigeria). The SEMRY project therefore strikes one as an export project and not an operation geared to domestic demand. With the closing of the Nigerian border, the rice can no longer be sold.

On-farm consumption accounts for only 10 percent of the value of production. This project is thus firmly integrated into the money economy, and many rice growers are not self-sufficient in food.

SEMRY employees receive a higher share of rice income (52 percent) than the growers (35 percent). In this sense, this is indeed more an agro-industrial than a rural development project.

Despite good technical results, the incremental value added that was created by the project over the last ten years is still below operating costs. The subsector's poor economic results raise the issue of rice production cost. In 1983, production cost was CFAF 185 per kilogram, the selling price to merchants CFAF 150, and the state subsidy (therefore) CFAF 35 per kilogram.

SEMRY's rice marketing difficulties stem from the fact that its market is not protected against competition from imported rice. Counting transportation costs and margins, imported rice arrives in North Cameroon (the region where SEMRY rice is produced) at between CFAF 150 and 155 per kilogram, i.e., at a price below that of SEMRY rice, sold by merchants at CFAF 165. And this is not to speak of the ability of SEMRY rice to compete on the Yaoundé and Douala markets, where its price would be augmented by transportation costs.

SEMRY rice is not competitive. The present situation gives cause for serious concern, since in July 1986 unsold rice stocks amounted to 65,000 tons of paddy and 11,000 tons of milled rice—meaning that a total of CFAF 7 billion was tied up. As a result, SEMRY sold off 5,000 tons of rice at CFAF 70 to be able to pay its employees, and it withheld payment to the farmers for the last paddy harvest, which amounted to 50,000 tons.

All this because the "linked sales" system (*jumelage*) has not worked well. This method of cross-subsidization consists of tying each dealer's import permit to a compulsory SEMRY rice purchase quota. Until 1985, the fact that dealers skipped their obligations to purchase SEMRY rice did not matter because there was demand for it in the Nigerian market. When the border trade was officially cut off, the dealers did not honor their obligations any more than they had done before, and SEMRY rice sales slumped.

The validity and success potential of the SEMRY model of agricultural water resource management remain questionable, as the technical standards applied (mechanization with technical assistance and general introduction of the practice of two cycles) call for control and authoritarian supervision, which up to now has left little room for initiative by the farmers.

Have the original goals been achieved? At the national level, rice self-sufficiency is well on the way to being achieved technically. At the regional level, the impact is beyond dispute: farmers' incomes amounted to CFAF 6 billion in 1985.

This having been said, the capital and operating costs of the operation are high. The self-sufficient "inward-looking" nature of the project remains a goal on paper alone—in that only 10 percent of the rice consumed in the project area is growing in the scheme. Rice imports have not been reduced, and the central problem of selling SEMRY rice on the domestic market has not been resolved.

This project has been "orphaned": The external financing sources have been withdrawn (although French technical assistance still remains) and the government of Cameroon has not been able to take the essential decisions of taxing imported rice or suspending SEMRY.

Limits on Growth of the Modern Agricultural Sector

The growth of the modern agricultural sector is hampered by certain difficulties—largely ones of a structural nature. The setting up of large agro-industrial complexes presupposes the availability of both land and labor, which often is contradictory. In the densely populated areas, manpower is available, but not land. The large agro-industrial complexes came into conflict with local production systems, which are all based on the possibility of long fallow periods. The mobilization of local labor, usually young people, works to the detriment of traditional agriculture. It is a problem of how to integrate these high-productivity enclaves, which up to now have demonstrated more of an ability to destroy the environment than to become development nuclei.

Conversely, in the empty areas, the land problem does not arise, but labor does have to be brought in. This calls for heavy road, housing, and social infrastructure investments, which impose a large burden on the economics of these projects. Generally speaking, the cost per job created becomes prohibitive in the modern agricultural sector: CFAF 7-10 million, with high recurrent costs and a very uncertain return.

The Traditional Food Sector

Traditional Food Crops: A Neglected Sector

Government interventions have focused on export crops (cocoa, coffee, cotton) or import-substitution crops (rice), neglecting traditional food crops—even though these constitute the agriculture sector's most important source of value added and jobs.

Cameroon does not fare badly in terms of food self-sufficiency in comparison with many African countries: food imports are only 5-6 percent of total imports.

At the beginning of the 1970s, each member of the active population produced for 2.5 persons; in 1985, the figure was 3.5 persons. Extension and supervision having remained minimal in food crops, it appears that the growth in food production results from spontaneous intensification by the farmers, spurred by a sharp rise in food crop prices.

A Context of Favorable Urban Prices

Food crop prices in the major urban centers have risen faster than inflation over the past 20 years—indicating that the equilibrium between supply and demand has become increasingly precarious. In the cases of Central and South Cameroon, for which statistics are available covering a long period, demand pressure has been very high in the markets for the five major consumer products (beans, macabo, cassava, bananas, and maize). Prices rise in steps and stabilize, but they do not fall in subsequent years. Rice and bread, whose prices remain relatively low, play a substitution role in response to price rises of other products. Nevertheless, judging by price and income elasticities, consumers remain attached to their food habits, and the demand for cassava bananas, and macabo remains rigid. The speed of urban growth and the resulting demand pressure have created a context of favorable prices that up to now has sustained the growth of food production.

The profitability of food crops also has to do with the characteristics of the marketing system, whose fragmentation and sharp internal competition systematically limit margins. Generally speaking, the net margin is 14 percent, and the producer receives 50-55 percent of the consumer

price, which is fairly favorable. Moreover, until about 1977, food crops benefited from the low producer prices of the principal export crops.[19]

Thus the traditional food sector so far has responded to and profited from the pressure of demand. But productivity gains are becoming more and more difficult to achieve.

Weakness of Government Interventions

Historically, marketing has been the priority focus of government action in the food sector. The object was to regulate the prices of food products and to ensure a regular supply to the towns. Generally speaking, these government agencies have not been able to control a large enough share of the market to be able to regulate prices. Being far less efficient and flexible than private dealers, they have suffered heavy operating losses, and most of them have trimmed their activities.

The case of MIDEVIV (*Mission Interministerielle du Développement des Cultures Vivrières*) provides an example. When it was established in 1976, its objective was to control 20 percent of the food crops market in Yaoundé (about 25,000 tons). Yet in its best years, MIDEVIV has not marketed more than 3,000 tons—at an average net cost to the national economy of CFAF 24,000.

Production Interventions

On the production side, rainfed food crops have been neglected for a number of reasons. Research gains in food crops other than rice and maize have been limited. This is in part due to research policy, which up to the end of the 1970s focused on export crops. In Cameroon, as elsewhere, food crops research is a good ten years behind (this is particularly true of bananas, beans, and all tubers). The paucity of research gains that can truly be disseminated—that is, *incorporated* by the farmers—also has to do with ignorance of the constraints on and the strategies of local production systems, as well as with insufficient liaison between research and extension.

Subsidies on food crop inputs cannot—as in the case of export crops—be recovered downstream by taxes on the final producer price. Intensifying traditional food crop production therefore calls for a system of rural credit or aid that functions without the need for direct reimbursement to government—which probably explains the timidity of government action in this field.

Food Self-Sufficiency Policy

While the investments made in sugar, rice, and palm oil production undoubtedly have limited the import burden, they are far from fully meeting domestic demand. Moreover, all of these subsectors suffer from acute marketing difficulties. This is in part due to the unsuitability of supply: crude palm oil does not, for example, meet the urban demand for refined oils—just as (in the case of exports) cheap granulated sugar does not meet demand for lump sugar.

Domestic production costs are higher than world market prices, and the domestic market is poorly protected. This results in massive and often clandestine import flows that cannot be justified by a supply deficit. This of course applies not only to rice, but also to sugar and oils.

SEMRY exemplifies this situation, as it is both a model of technical development and a commercial failure. Production costs, though lower than those of similar schemes elsewhere in Africa, remain above the cost of imported rice delivered to northern Cameroon. In the absence of duties on imported rice, the project increasingly depends on government subsidies to maintain its financial equilibrium.

Broadly speaking, SEMRY's difficulties raise a fundamental problem: that of matching cyclical economic policies to the subsector's operational needs. Rice finds itself in a competitive economic environment that changes very rapidly (price of imported rice, volume of imports, demand by or closure of the Nigerian market). Nor does the Cameroonian government err on the side of haste in taking decisions: it usually takes more than six months to alter an administered price (SEMRY prices remained stable for seven crop years at a time when production costs were rising), and the present "linked-sale" system cannot be efficient in the face of such large discrepancies between domestic and imported rice prices.

Responses to the market therefore should take place faster, making the best possible use of economic policy instruments such as the modulation of customs duties and changes in the selling price of rice.

Conclusions

These two case studies demonstrate that the rural development policies of Senegal and Cameroon have neglected traditional food crops in favor of export crops. These policies are a legacy of those followed by France in colonial times and derive from what has been called the colonial pact, the principle of which was that the colonies were to produce the raw materials needed by the home country.

To achieve this goal, the French government originally instituted taxes payable in money and thereby compelled farmers to produce for the market. This system worked satisfactorily because these territories were areas self-sufficient in food production, and their labor force was not employed full-time because it lacked outlets for produce. In compelling the territories to produce materials needed for the French market, the colonial system did not upset the food equilibrium of their populations. Export crops came to be added to the traditional crops, utilizing the farmers' surplus labor capacity.

The French government guaranteed economic services to the French private sector, which it called upon to invest in ports, road and rail networks, and extension services to improve production conditions. With the collapse of raw materials prices after 1929, it was feared that these advances were going to be wiped out and that farmers would refuse to produce for such low prices. France thereupon set up a preferential area within which the home country granted a premium on production from the colonies—imposing import duties on similar products from other countries and passing their amount on to producers in the colonies. This policy, the effect of which was to raise prices on average 25 percent above world market rates, stimulated a substantial increase in production. The system was continued during the first years after independence, with preferential access to the French market under price-premium conditions.

Change came in the mid-1960s with the signing of the Yaoundé Convention, associating the former colonies with the European Economic Community, which provided for the abandonment of price premiums and the introduction of production subsidies designed to raise productivity and thereby compensate for the fall in prices.

At the same time, a production diversification policy was instituted, both for export crops (to do away with dependency on a monoculture and for food crops (to ensure self-sufficiency and eliminate the need to import food products). Among export crops, productivity gains were obtained only in the case of cotton, with the result that farmers' incomes fell. With regard to food crops, emphasis was placed entirely on irrigated rice cultivation to replace imports. The course decided upon was the most sophisticated one possible, with prohibitively high development works and operating costs in low rainfall areas, where pumping was necessary year round. And this in a situation where rice could be obtained very cheaply on the world market, so that any domestic efforts were not competitive.

This leads to the conclusion that the situation of these countries has changed little since the colonial period—except that their economies are no longer protected, and their raw materials prices bear the full brunt of the deterioration in terms of trade.

Yet these countries need foreign exchange, and their only source continues to be the exploitation of their natural resources in the form of export crops. They must therefore continue to bank on this sector, at any rate in the short and medium term. But under what conditions?

Development of export crops depends on four factors: producer prices, input subsidies, research results, and project management.

For all products, a good producer price leads to an increase in areas under cultivation. This applied to all products before 1964, without any need to subsidize inputs.

When producer prices are low and inputs are subsidized, the situation differs depending on whether one is looking at an extensive crop such as groundnuts, or an intensive crop such as cotton. In the case of groundnuts, the increase in productivity due to subsidized inputs is insignificant and does not offset the reductions in area (an example is afforded by the productivity operation in Senegal in 1967-69). In the case of cotton, on the other hand, the increase in productivity offsets the reductions in area.

The explanation for the contradictory responses of the two crops to intensification lies in the other two factors that also govern increases in production: research results and project management.

Research results are not convincing evidence for the groundnut, coffee, or cocoa farmers. These farmers always prefer the logic of extensive cultivation, which guarantees a certain income, to the risk of attempting to increase productivity through more intensive cultivation practices—a gamble that they are not certain to win and that is expensive for them. For example, in the Senegal Groundnut Basin, the sharp fall in fertilizer consumption did not lead to any spectacular drop in yields. This has not, however, been true of cotton, where the farmer can see that one or more fertilizer treatments can bring productivity gains of 25-30 percent.

The other crucial factor is project management. On the one hand, groundnut, coffee, and cocoa production on small farms respond individually to the market and depend on its smooth functioning (input supply, credit, marketing). It can happen that this market is held by government companies that do not perform their role properly and do the farmer a disservice (as in the case of groundnuts in Senegal), or that no market exists (as in the case of groundnuts in Mali after the government company was dismantled) and production collapses.

On the other hand, there are government plantations (rubber, palm oil) managed by technical agencies, with proletarianized growers, among whom one can include cotton growers. Like the government plantations, at the functional level, the cotton subsector is controlled from upstream of farm production to the c.i.f. stage by the CFDT apparatus, leaving farmers little room for initiative. The small farmer in this case does not really operate from a production function, but from a labor supply function. This highly centralized, highly capitalized organization, which achieves good technical performance but at the price of high factor costs, is condemned to intensive production. In a situation of low producer prices and no input subsidies, production falls sharply, as happened with groundnuts after 1967. This certainly would be the case with cotton at the present time if the producer price had been aligned on the world price and if subsidies had been abolished. The price that could be paid to the cotton growers would be so low that, conversely to what happened in the recent period, it would have a deterrent effect and would wipe out 20 years of efforts to achieve intensive cultivation.

This points to the problem of *world* prices, which—more often than not—today bear no relation to production costs and correspond to dumping prices.

Notes

1. Study and project companies: BCEOM—*Bureau Central des Equipements d'Outre-Mer* (overseas plant); CFDT—*Compagnie Française de Développement des Fibres Textiles* (textile fibers); BDPA—*Bureau de Développement de la Production Agricole* (agricultural production); SATEC—*Société d'Aide Technique et de Coopération* (Technical Assistance and Cooperation); SEDES—*Société d'Etudes du Développement Economique et Social* (Economic and Social Development); and SCET-AGRI—*Société Centrale pour l'Equipement du Territoire—Secteur Agricole* (equipment development, agriculture).

2. Research institutes: ORSTOM—*Office de la Recherche Scientifique d'Outre-Mer* (Overseas Scientific Research Institute); IRHO—*Institut de Recherches pour des Huiles et Oléagineux* (Edible Oils and Oil Crops Research Institute); IRAT—*Institut de Recherches Agronomique Tropicales et des Cultures Vivrières* (Tropical Agriculture Research Institute); and IRCT—*Institut de Recherches du Coton et des Textiles Exotiques* (Cotton and Exotic Textiles Research Institute).

3. In fact, those former colonies that entered into cooperation agreements with France (i.e., excluding Guinea until recently).

4. The study on Senegal was produced with the assistance of P. Thenevin, and that on Cameroon, with the assistance of P. Baris and J. Zaslavsky.

5. Synthèse des evaluations riz, coton, arachide (Summary of rice, cotton, and groundnuts evaluations), P. Thenevin, Ministry of Cooperation, Paris, 1983.

6. Evaluation économique de l'aménagement de la rive gauche du fleuve Sénégal (Economic evaluation of development of the left bank of the Senegal River), J. M. Funel et al., Ministry of Cooperation, Paris, 1982.

7. Evaluation de la filière arachide au Sénégal (Evaluation of the groundnut subsector in Senegal), P. Thenevin, J.M. Yung, Ministry of Cooperation, Paris, 1982.

8. Evaluation de la filière coton au Sénégal (Evaluation of the cotton subsector in Senegal), J. Benhamou, J. Zaslavsky, Ministry of Cooperation, Paris, 1982.

9. Evaluation de la filière riz en Casamance (Evaluation of the rice subsector in Casamance), Ph. Bonnefond, Annie Loquay, Ministry of Cooperation, Paris, 1985.

10. Filière arachide, réactualization (Groundnut subsector, update), C. Agel, P. Thenevin, Ministry of Cooperation, Paris, 1983.

11. La filière mil dans le bassin arachidier (The millet subsector in the Groundnut Basin), J.M. Yung, Ministry of Cooperation, Paris, 1984.

12. La filière mais au Sénégal (The maize subsector in Senegal), C. Agel, J.M. Yung, Ministry of Cooperation, Paris, 1985.

13. Analyse économique de la filière riz SAED, réactualization (Economic analysis of the SAED rice subsector, update), Ph. Bonnefond, C. Raymond, Ministry of Cooperation, Paris, 1983.

14. Politique d'ajustement structurel au Sénégal (Structural adjustment policy in Senegal), G. Durufle et al., Ministry of Cooperation, Paris, 1985

15. Bilan diagnostic du secteur agricole 1960-1980 (Diagnostic balance sheet of the agriculture sector, 1960-80), Ministry of Agriculture, Yaoundé, 1980.

Bilan du secteur agricole interne du 5ème Plan (Balance sheet of the domestic agriculture sector of the Fifth Plan), Ministry of Agriculture, Yaoundé, 1985.

16. La filière coton (The cotton subsector), CCCE, Paris, 1984.

17. L'Impact et le coût de la SODECAO dans la filière cacao (Impact and cost of SODECAO in the cocoa subsector), P. Baris, J. Zaslavsky, SODECAO, Yaoundé, 1984.

18. Evaluation socio-économique du projet SEMRY (Socioeconomic evaluation of the SEMRY project), C. Arditi, P. Baris, Ministry of Cooperation, Paris, 1983.

19. La demande et le marché des vivres dans les villes du centre et du sud (Food crops demand and market in the towns of central and southern Cameroon), P. Baris, J. Zaslavsky, SODECAO, Yaoundé, 1984.

Chapter 7

British Aid to Agriculture in Malawi, Tanzania, and Kenya

JOHN HOWELL

Note

This chapter draws upon an evaluation study entitled UK *Agricultural Aid to Kenya, Tanzania and Malawi*, EV 388 (London: ODA, 1988) which was written by a team from the Overseas Development Institute consisting of John Howell, Adrian Hewitt, and Kenneth Anthony.

Introduction

This chapter is primarily concerned with the impact of aid from the United Kingdom on the agricultural development of three countries: Malawi, Tanzania, and Kenya. It also attempts to place such aid in the longer-term context of British colonial support for African agriculture; and to consider postindependence agricultural aid in the wider context of U.K. aid policy and its administration.

Most of the chapter is devoted to an examination of the composition and impact of agricultural aid in the three countries, with particular attention to those aid interventions that illustrate some of the distinctive characteristics of British agricultural aid in the period since 1970:

- Support for agricultural research and for agricultural technical services and inputs supply more broadly;
- Investment in smallholder export crop schemes;
- Support, particularly in the 1970s, directed toward area-based "integrated rural development" projects; and
- The supply, in the 1980s, of program aid in support of economic policy reform directed at the agricultural sector.

A concluding section reviews ODA's record in these areas in the three countries and draws lessons from this experience on the relative strengths of different components of the agricultural aid program and on the possible relative strengths of U.K. agricultural aid within overall donor assistance.

The Context of Agricultural Aid

Components and Expenditure Trends Since 1970

The bilateral agricultural aid program can be divided into several categories. Within the general head of Financial Aid, the most important categories are project aid; program aid for import financing for countries with balance of payments difficulties); and concessionary finance made available to the Commonwealth Development Corporation (CDC), a statutory body established in 1948 to promote development by commercial investment in agriculture and other sectors. Within the general head of Technical Cooperation, the most important categories have been the supply of personnel to governments or other public bodies overseas and the training of developing country nationals in the United Kingdom.

A further important category of agricultural aid (that is not allocable by country) includes grant support for tropical agricultural research and other services based in the United Kingdom. This expenditure is channeled primarily through research and development funds to ODA's scientific units, notably the Tropical Development and Research Institute (TDRI) and the Land Resources Development Centre (LRDC), which were amalgamated in 1987 to form the Overseas Development Natural Resources Institute (ODNRI).

In the period since 1975 (when contributions to EEC aid began) there has been a substantial growth in the United Kingdom's multilateral aid. By 1987, the share of multilateral aid had risen to 42 percent of the total program, to around 10 percent in the early 1970s. Partly as a consequence, the U.K. bilateral program in Sub-Saharan Africa is now only the eighth largest source of donor support, after having been a dominant donor, together with France and the World Bank, in the early 1970s.[1] However, within a shrinking U.K. global bilateral program, the share of aid directed to Sub-Saharan Africa has risen from around 30 percent in the 1970s to 47 percent in 1987, making it the largest recipient region.

Within this provision to Sub-Saharan Africa, project aid generally maintained its importance over the period since 1970, although since 1985 there has been an increase in the share of nonproject aid due to both disaster relief and a new emphasis on program aid. Within project aid, expenditures in most subsections in agriculture and natural resources have declined in the 1980s (see Table 1).

Similarly, the level of CDC commitments to agriculture in the Sub-Saharan region has declined since the late 1970s.[2] As Table 2 illustrates, Kenya and Malawi (two of the most important countries for CDC agricultural investment) reflect declining agricultural investment opportunities for CDC, especially in those smallholder crops with which it is most closely identified.

The number of technical assistance personnel working in Sub-Saharan Africa also has declined steadily. In 1972, 740 officers were in post in agriculture, mostly supplemented government posts; by 1985, there were only 154, mainly on a fully funded advisory basis. After 1980, there was also

Table 1
Agricultural project aid expenditures in Kenya, Tanzania, and Malawi (combined) by sub-category 1980-85 (£000)

	1980	1981	1982	1983	1984	1985
Agriculture						
Crop Production	7,296	3,553	1,918	2,612	1,047	2,955
Storage and Processing	537	575	743	5	123	1,064
Inputs and Marketing	165	15	10	1,411	2,925	599
Research	305	86	70	—	—	—
Irrigation and Water Resources	532	664	810	558	339	208
Livestock	462	160	151	326	139	57
Forestry	1,044	462	1,394	100	98	554
Fisheries	—	—	—	—	—	81
Rural Development						
Road Utilities	1,219	972	475	31	—	7
Rural Roads	352	337	206	684	291	417
Other Rural Development	573	1,418	1,689	763	391	15
TOTAL	12,585	8,242	7,466	6,490	5,353	5,957

Table 2
CDC agricultural commitments in Kenya and Malawi (combined) by sub-category[a] 1970-85 (£000)

	Smallholder crops and nucleus estates				Estates
	Tea	Sugar	Tobacco	Coffee	
1970	75		600		
1971	913				
1972	210				78
1973	8,715	1,746			
1974					
1975		800			
1976	650	4,561	3,000		
1977					2,328
1978	6,840	1,530		10,400	
1979			560		
1980		500			3,900
1981					
1982		1,360			1,360
1983					
1984					6,459
1985					3,400

[a] Excluding agricultural inputs, e.g., National Seed Co. (Malawi).

decline in real expenditure to support tropical agricultural research in the scientific units, although the grant position stabilized after 1986, and grants to the International Agricultural Research Centers increased over the period.

The data on U.K. aid since 1970 does not, however, indicate any major changes in priority accorded to agriculture in Sub-Saharan Africa. Although there are some indicators of diminishing support for particular forms of aid at different periods, aid to multilateral institutions (such as the World Bank, IFAD, and the EDF) that have given emphasis to African agriculture has increased steadily, and there has been a substantial increase in the mid-1980s in bilateral program aid, which in large part is intended to facilitate policy reforms in support of agriculture.

Within the agricultural sector, ODA priorities for Sub-Saharan Africa have seen some adjustments over the period, although there are a number of long-standing areas of U.K. agricultural aid interest. In the period immediately following independence, national and regional agricultural research services were given U.K. assistance in the form of budgetary support and the supply of staff. Project aid began to be substituted for budgetary aid in the late 1960s, and ODA moved away from sustaining research programs and institutions toward solving specific problems. Moreover, research and development funds were allocated toward projects intended to have a regional applicability, and grants increasingly have been concentrated on U.K.-based research.

There had been a particularly strong colonial legacy of export crop research and services, but direct ODA support declined after independence, as the industries concerned and the Commonwealth Development Corporation assumed relatively more importance, although often with some U.K. technical assistance. In the 1970s, emphasis shifted toward food staples, although by this time the emergence of the Consultative Group on International Agricultural Research (CGIAR) centers reinforced the British decision to remain apart from long-term research programs of plant-breeding and to concentrate upon "problem solving"—where the strengths of the scientific units, particularly the former Tropical Development and Research Institute (TDRI) have been particularly evident. TDRI itself had been formed by the merger in 1983 of the Centre for Overseas Pest Research (COPR) and the Tropical Products Institute (TPI), both of which had their origins in the colonial period.

The former TDRI was particularly concerned both with post-harvest technology—quality control, processing, storage, and marketing—and with pest and vector management, and its work straddled both research and technological services more widely. These services, however, were only one part of ODA's involvement in "public sector agricultural supply," for which there have been several different forms of aid support. In project aid, the most important components have been the provision of planting materials and breeding stock, animal health services, crop protection services, and soil conservation services and minor irrigation.

In training aid also, British Council data indicate a strong bias toward courses at ODA-supported research centers on seed technology, pest management, crop storage, agricultural engineering, and veterinary services.[7] In the conclusions of this chapter, it is argued that the main successes of U.K. agricultural aid have been in technical services and inputs supply—including the work of the Commonwealth Development Corporation (CDC), which has made major contributions in the provision of farm inputs for selected crops and in the development of seed industries.

Since the mid-1960s, CDC has specialized in extending to smallholders the production of exportable crops such as tea, coffee, sugar, and flue-cured tobacco. This has generally involved the provision of capital for development of scheme infrastructure, processing capacity, and working capital, along with technical and managerial support to provide the supply of inputs and production services (such as field preparation, extension, and crop marketing). CDC, together with ODNRI and its predecessors, provide U.K. agricultural aid with much of its distinctiveness; and CDC, in particular, represents the main component, in financial terms, of British agricultural support for several African countries. For example, CDC's loan finance for the production and processing of sugar and tea constitute a large part of agricultural project aid in Malawi and Kenya.

Despite this emphasis, critics of U.K. agricultural aid (such as some of the nongovernmental organizations (NGOs) and the environmental lobbies) are wrong in claiming that British aid has supported mechanized farming, modern irrigation, plantation crops, and the use of imported chemicals, vaccines, and fertilizers, to the neglect of "peasant" agriculture and the production of food staples. Although it is true that expenditure on integrated rural development has fallen away in recent years (see Table 1), and that, within such projects, there has been a disappointing level of impact on peasant incomes and production, it simply is not the case that the Overseas Development Administration (ODA) has given priority in its aid allocations to modern, commercial agriculture of the sort associated with plantation companies and large estate owners at the expense of food staple production by peasant producers.

Similarly, it is not the case that ODA has neglected to finance investment in the export crop sector because of an overemphasis upon improving the welfare and incomes of cultivators and herders in the traditional sector and in marginal environments. Within a generally shrinking program of bilateral *project* aid support for agriculture, proportions of spending in the period since 1970 have been broadly maintained between "traditional" and "modern" agriculture, between high potential and low potential areas,

and between export crops and domestically consumed staples.

Changes in the Overall Aid Policy Context

The broader aid policy context of U.K. support for agriculture in Sub-Saharan Africa has undergone some shifts in emphasis since 1970. In 1975, a White Paper on *The Changing Emphasis in British Aid Policies* committed the government to a poverty-oriented program that would have "the most effect in alleviating the worst poverty over the long term." The main instrument in achieving this was to be the placing of an increasing emphasis in bilateral aid on the poorest countries—especially those most affected by the rise in the prices of oil and other commodities. A subsidiary objective was to assist the poorest people in the poorest countries, particularly in the "large, very poor, and mainly rural, traditional sector."

One thrust of the new approach involved support for a number of Integrated Rural Development Projects (IRDP) particularly in Sub-Saharan Africa. Many of the concerns for developing subsistence farming in Africa were voiced in the United Kingdom in the 1960s before poverty-focused integrated rural development became widely commended by donors. These concerns were later evident in the White Paper, which represented a more comprehensive statement of the IRDP case than either the World Bank or FAO had formulated at that time. The White Paper expressed the need to address the constraints on production and welfare in several subsectors simultaneously; to develop local level planning and implementation capabilities; to accept the need for patience and flexibility in technological development and in institutional arrangements; to consider more finance for local cost components; and to look for new skills in understanding rural household economics.

In practice, however, it proved difficult to initiate ODA poverty-focused integrated rural development projects, and "more help to the poorest" in practice often meant either conventional projects that fitted poverty focus requirements or support for area-based programs already identified by governments or by other donors, particularly the World Bank. A number of IRD projects in Africa were started in these circumstances, and this similarity served—as discussed below—to oversimplify the lessons that were drawn from the disappointments of the projects begun in the mid- to late 1970s.

The major policy change of the new government from 1980 onward was to introduce a stronger commercial and domestic industrial element into the aid program. This reflected the concern of virtually all aid donors to use the aid program to help secure or protect their market share in developing countries. One element of this policy, the Aid Trade Provision (ATP), was in fact introduced in 1977 before the change of government and before the deepening of the world recession.

The impact of the emphasis upon U.K. commercial considerations on aid allocations to African agriculture is difficult to capture. The share of ATP allocations in the aid program has continued to expand, but none of the 82 ATP-related sales between 1978 and 1985 were in agriculture in Sub-Saharan Africa. Furthermore, the share of the agricultural sector in *project* aid declined in Africa after 1980 with the growth in aid to the power and transport sectors. Yet against this evidence has to be set the difficulty experienced by ODA in identifying suitable opportunities for agricultural project investment. It was this difficulty, rather than commercial and industrial pressures, that contributed to a shift in emphasis away from project aid support toward program aid.

This shift can be traced to the early 1980s, when evidence on Africa's deteriorating economic performance pointed to the poor returns to aid assisted project investments. ODA, like other donors, took the view that most African governments were proving incapable of maintaining at economic levels much of the physical infrastructure and public services that had been built with external aid, and that both productive investments and domestic financing capacity were being undermined by public policies inimical to growth. The agricultural sector was considered to be particularly disadvantaged by prevailing government policies.

In ODA, these constraints on effective use of project aid funds led to a renewed interest from 1981 in "sector aid," whereby several aid instruments are used together. Sector aid is designed in part to rehabilitate production in sectors such as agriculture. After 1983, there was also an attempt to regenerate manpower aid. Although the reduction of manpower aid had been deliberate policy since the late 1970s, an ODA review in 1983 made the case for an enhanced program in training and manpower provision. The withdrawal of expatriate manpower was seen as a factor contributing to the deteriorating performance in public institutions, and the review argued that U.K. aid should be directed toward rebuilding those institutions whose "efficient functioning is critical to development." Much more important in financial terms, however, was a substantial shift into program aid linked to conditions of policy reform designed to enhance agricultural output and, in particular, agricultural export earnings.

None of these instruments of policy were new, but together they represented a move away from identifiable project initiatives. A ministerial Commons statement in 1985 confirmed this emphasis in relation to Sub-Saharan Africa. This noted three main elements: (a) fast-spending program aid to support economic policy reform, (b) the strengthening of public institutions through increased manpower and aid training, and (c) a package of assistance to rehabilitate key sectors of the economy.

Current U.K. policies on program aid mirror, albeit imperfectly, other forms of nonproject aid that were important in the 1960s and the early 1970s, and that included formal nonproject-related conditions agreed upon with the recipient government and relating to agricultural and domestic public expenditure policies. Examples include the Land Transfer Programme in Kenya and the last years of budgetary aid in Malawi. In the 1970s, there were fewer examples of program aid, and these often were designed (as in Tanzania) largely to relaunch a suspended bilateral program and to provide balance of payments assistance. Moreover, such program aid allocations did not have either a specific agricultural focus or a framework for macroeconomic policy change.

Aid Mechanisms

The initiative for identifying and developing new agricultural projects and programs is left substantially to officers working at ODA's Development Division level within the main regions (which include eastern Africa, based in Nairobi, and central and southern Africa, based in Lilongwe). In countries such as Malawi in the early 1970s, when ODA had a large number of Technical Cooperation Officers (TCOs) serving in governments, and a spread of small projects in the agricultural sector, project proposals

often were instigated by TCOs working within their ministries. However, in the late 1970s, a number of ODA agricultural projects in the region had their origins in preparation or appraisal documents prepared by other donors, particularly the World Bank. For example the Tabora Land Use Project (in Tanzania) and the Bura Irrigation Project (in Kenya) were components of larger projects prepared in advance of a formal ODA identification mission. The major area-based projects in all three of the countries discussed in this chapter were also a response to national programs within which individual bilateral donors were invited to consider support for specific regions or districts.

An ODA evaluation of project procedures in 1983[4] argued that, particularly in the more complex agricultural projects, the design and appraisal stages should be more carefully prepared, and a broader disciplinary approach should be adopted (meaning additional advisory inputs). It is evident, however, that while other agencies (such as the World Bank) have been willing to commit more substantial resources of time and staff to project preparation, they have also run up against the difficulty of designing projects for developing the traditional systems of crop and livestock production in Africa.

Despite some reductions in the advisory cadre following a 1980 Management Review, the ratio of ODA Natural Resources Advisers to volume of agricultural spending has in fact increased over the period, as has the ratio of advisers to technical assistance posts overseas.[5] But this apparent lightening of the load of NR Advisers should not be taken at face value. Advisers have a larger program of monitoring work than in the past, when smaller projects were more often monitored simply by reports from ODA-appointed TCO project managers, and when ODA projects often were administered by British supplemented staff within ministries.

Agricultural Aid to Malawi

The Colonial Legacy

The main agricultural legacy of the British colonial period in Malawi (or Nyasaland) was an export-oriented estate sector whose growth had been facilitated by transport investments and supported by research services in crops such as tea, cotton, and tobacco. Smallholder export crops also received some official encouragement. For example, by the end of the 1930s, the cotton industry had become reliant primarily upon African smallholder production, and dark-fired tobacco production had been stimulated by a Native Tobacco Board established in 1926. It was not until the 1950s, however, that the colonial government promoted African smallholder production on any scale.

Broadly speaking, there were *two simultaneous approaches*. First, there were export crop production schemes (for tea, tobacco, and confectionary nuts, for example) based on expanded research, marketing services, and transport improvements. Second, a few small, intensive area development projects were introduced based on land consolidation and some soil conservation.

Chitedze Research Station was established in 1950 to serve small-scale farmers in the Central region, and five smaller stations were opened to cover the main ecological regions. A program of cattle selection and management also was begun. A new station for tea research (which became the responsibility of the Tea Association in 1959) was opened at Mulanje in 1949, and Malawi joined the Federal Tobacco Research Board in 1954. An Agricultural Research Council of Rhodesia and Nyasaland was founded in 1959 to reinforce agricultural research in Central Africa. This survived the break-up of the Federation but was ultimately dissolved in 1967, when Malawi responded by setting up its own Agricultural Research Council.

In the 1940s, extension services in Malawi were provided to African farmers, although work was largely confined to soil conservation measures. In 1946, legislation was introduced to prescribe and enforce conservation practices in response to what was seen as a serious rate of exhaustion of land under prevailing cultivation and tenure arrangements. It was held that, in high density areas, fundamental changes were necessary in husbandry practices, the physical layout of land holdings, and land tenure, before sustained increases in productivity could occur. As a result, a number of "intensive" land schemes were introduced that subsequently often involved the settlement of "Malawi Young Pioneers" from agricultural training centers. But the most important scheme of land consolidation and development was the Lilongwe Land Development Project (LLDP).

The four Integrated Rural Development Projects (IRDPs), instigated after independence with World Bank support, followed the intensive area development model and were a direct legacy of the colonial schemes. ODA continued to support the LLDP, although it was not until the late 1970s that British agricultural aid expenditure became heavily concentrated on the National Rural Development Program (NRDP), which itself had evolved from IRDP experience (see below).

Trends in Agricultural Aid

At independence in 1964, the U.K. budgetary grant of £ 5 million to Malawi represented one-third of total recurrent expenditure. By 1970 the grant was down to £ 2 million (and 10 percent of expenditure), and from that time on, project aid (and particularly CDC loans) became the main instrument of support for the agricultural sector until program aid was introduced in the early 1980s (see Table 3). These program aid allocations (see below) have an agricultural focus in that they have been linked, in part, to donor prescribed economic policy changes (including changes in agricultural pricing and farm input subsidies). But attempts have also been made to target program aid directly on the agricultural sector, by addressing the position of foreign exchange availability for agricultural importers.

A more enduring form of aid has been technical cooperation, which by the mid-1980s had risen to around 50 percent of the total U.K. aid disbursement. The position of U.K. manpower aid to the Malawi public service has changed since the 1960s and 1970s; for example, while aid-funded Permanent Secretaries and similar postings are now the exception, U.K. nationals have a much larger presence in Malawi than in Kenya and Tanzania. There have been significant reductions in recent years: the number of TCOs and supplemented posts in Agriculture and Natural Resources stood at 80 in 1975, rose to 91 in 1980, and fell to 31 in 1985.

Table 3
United Kingdom bilateral aid to Malawi 1970-85 (£000) (major components, gross disbursements)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Financial Aid																
Project aid (including ATP)	2,959	2,766	4,846	3,366	3,005	5,339	7,608	4,585	6,060	8,854	3,894	2,845	3,670	2,515	3,161	3,277
Program aid	—	—	—	—	—	—	—	—	—	—	—	3,612	1,645	214	224	1,054
Debt cancellation	—	—	—	—	—	—	—	—	—	1,457	1,364	1,615	1,777	1,833	1,889	1,917
Other nonproject	2,945	692	—	—	—	—	842	—	233	1	—	—	—	23	—	—
CDC Loans	120	575	529	1,375	1,741	2,075	3,239	7,505	5,647	9,004	5,012	1,736	3,369	3,076	748	1,092
Subtotal	6,024	4,033	5,375	4,741	4,826	7,414	11,689	12,090	11,940	19,316	10,270	9,809	10,461	7,661	6,022	7,340
Technical Cooperation																
Wholly financed personnel	63	129	173	151	115	80	137	134	186	214	390	449	428	490	552	534
Partly financed personnel	1,337	1,306	2,343	1,624	2,661	2,734	3,679	3,279	3,065	4,181	4,204	4,220	4,023	3,941	3,482	2,904
Students and trainees	176	189	159	195	244	366	433	484	655	912	1,055	922	1,382	1,923	1,936	2,406
Other TC	109	117	146	190	225	132	76	82	132	148	602	555	688	593	904	642
Subtotal	1,685	1,742	2,822	2,160	3,244	3,312	4,326	4,429	4,039	5,455	6,273	6,190	6,523	6,959	6,938	6,486
TOTAL	7,709	5,774	8,197	6,901	8,071	10,727	16,015	16,519	15,979	23,314	16,543	15,999	16,984	14,620	12,959	13,825

The pattern of *project aid* has been much influenced by manpower aid. Apart from major CDC investments (described below) and an unsuccessful attempt to establish a pulpwood industry at Viphya based on softwood forests planted in the 1950s, the U.K. agricultural aid portfolio in the 1970s consisted of relatively small-scale interventions. In agricultural research a number of research teams were established—in grain legumes, cotton, and pastures, for example—following the decision to end budgetary aid to the Agricultural Research Council and to substitute project aid.

Apart from research, the main thrust of the agricultural aid program in the 1970s was a series of attempts instigated by TCOs or supplemented staff either to establish new activities in a specific part of the country or to support particular specialist services within the national system. Examples of the former activities are: the Mzuzu poultry scheme, the smallholder irrigated settlement in Hara, and the Integrated Livestock Project, which established marketing infrastructure as well as artificial insemination and other technical services in selected districts. Examples of the national specialist services approach include the dipping and vaccination program (which received a favorable evaluation report in 1983 in terms of reduction in cattle mortality rates) and the Seed Technology Unit.

The only project of this varied portfolio which continues to receive ODA support has been the animal disease work that is now largely involved in rinderpest control. The decline of small projects set in around 1980. Few were evaluated in any formal sense, but the issue was not whether the projects were individually successful or not. Indeed, it was felt (within the U.K. government and among influential donors such as the World Bank) that small donor-assisted projects were difficult to replicate and did not fit any national strategy to build capacity to assist large numbers of smallholders. For ODA, there were also the factors of declining TCO influence and of a declining aid program—and, more broadly, the value being attached to donor coordination and cofinancing arrangements. The upshot was ODA support for the NRDP, the major component of which was the Phalombe Rural Development Project (see below) which involved increased expenditure on extension, credit, and rural roads.

U.K. aid for Malawi's *research* programs has declined substantially since the early 1970s. The number of British personnel working in established agricultural research posts from independence through the early 1970s was around twenty. In 1981, there were only two OSAS posts, including Chief Agricultural Research Officer; today there are none. In addition, by 1981, ODA project aid for agricultural research had been reduced to a few projects in export crop research. Support for tobacco research, and for cotton research, was sustained over a long period, and this continuity has been an important ingredient in the establishment of local institutional capability. Support for maize research has been less successful (see below) and was relatively short-term.

CDC's *agricultural investment* in Malawi is larger and more diversified than in either Kenya or Tanzania. Its main role in agricultural development has been as the leading agency in promoting tea, sugar, coffee, and flue-cured tobacco among smallholders. Particularly in tea and tobacco, there has been a widespread uptake by smallholders, but the CDC schemes have not obtained the expected results in terms of farmer incomes, number of producers, or commercial viability of the authority concerned. The lessons of CDC in Malawi (see below) point particularly to the difficulty of covering the costs of managing tenancy-based schemes.

CDC's involvement in large estate sector agriculture has also been significant. Since 1980, the Corporation has invested in three new estate projects: Vizara Estates Rubber Karuzi Tea Company, and the Kawalazi Estate (tea, macadamia, and coffee). In addition, since 1977, CDC has provided three loans to the Government of Malawi to subscribe shares in the Dwangwa Sugar Corporation (DSC), which manages a 5,200 hectare irrigated estate in the Central region, of which 660 hectares are under lease to around 300 smallholders under the Smallholder Sugar Authority (SSA).

The SSA's Dwangwa Smallholder Sugar Project is a modest outcome, in terms of irrigated smallholder development, when set against the original objectives for the Dwangwa Delta. In 1969, ODA established a pilot rice scheme, and the subsequent British Irrigated Rice Project produced a proposal for 4,300 smallholder settlers. However, in 1973 the government decided to expand national

sugar production, and the Dwangwa Sugar Corporation was established.

Investment in sugar in the Dwangwa Delta (the overall investment includes the construction of a road north of Nkhotakota under ODA project aid) has proved unsatisfactory to date. Projected land development costs soared in the period 1977-81 partly due to the need to redevelop land and build flood protection works following an unanticipated rise in the level of Lake Malawi. More important in the long run, however, were the downturn in the world sugar price in the 1980s and sluggish domestic demand. For SSA producers, the ex-mill prices were some 20-30 percent below CDC appraisal report projections from 1982 onward. The government has provided price support (and ODA an effective subsidy—as the costs of the expatriate CDC manager are met from aid funds); but there have been over 70 resignations and evictions from the scheme, and the commercial viability of SSA is uncertain.

The record of SSA is repeated, in broad terms, in all four of the smallholder crop authority projects in which CDC has been involved as both financier and manager. The Kasungu Flue-Cured Tobacco Authority (see below) illustrates the problems for commercial management in circumstances where smallholder production is subject to large price fluctuations. Yet the first of the CDC smallholder projects, the Smallholder Tea Authority, which began in 1967, also shows positive price responsiveness, with significant yield improvements from 1983/84 (following world price increases) after several years in which poor husbandry and plucking standards caused some despair among managers. The current poor performance of the Smallholder Coffee Authority[6] also reflects the difficult and long-term nature of establishing a significant base for a smallholder export crop industry in a particular region. As in the SSA, ODA finance has been provided to cover part of the management costs, but the necessity of government subventions on the operating costs of the authorities runs counter to CDC objectives of establishing self-financing enterprises.

Crop Research: Cotton, Tobacco, and Maize

U.K. technical assistance has played a major role in the development of both cotton and tobacco in Malawi, particularly in resistance breeding and the development of cotton pest-management practices. Under the Colonial Development and Welfare Fund (CDWF), a cotton pest research program was established in Malawi in 1956; it was to work specifically on two major pests, the red bollworm and the stainer bug. In a successful period of work, the biology of the main pests was determined and recommendations developed for the control of the cotton pest complex. Together with the release in 1961 of Albar 637, which had a high degree of resistance to bacterial blight, the growing use of recommended insecticides provided the basis for a rapid expansion of the cotton crop in Malawi and elsewhere in the Central African Federation.

After independence, cotton pest-management research was continued by the Malawi Agricultural Research Council (which received support through U.K. budgetary aid); when this form of aid was ended, support for research in cotton breeding, agronomy, and pest management became available from ODA's research and development funds. For example, support was provided by the former Tropical Development and Research Institute (TDRI) in the design of traps to monitor bollworm populations, and in breeding, selection work continued to improve Albar 637 and another improved variety, Makoka 72, released in 1972. This work was undertaken by the staff of the Cotton Research Corporation (CRC). The CRC was a legacy of the Empire Cotton Growing Corporation established in the early part of the century. Its finance was provided from the U.K. aid program and from cotton-growing member countries. However, subscriptions were not always paid and the corporation ended in 1975, when contributions from member countries and ODA itself could no longer match operating costs. U.K. aid support has, however, provided help to develop a significant Malawian research capability to replace the earlier CRC work.

In 1986, the Ministry of Agriculture had a five-person research team, based at Makoka, four with postgraduate degrees from the United Kingdom. The strength of the team has been demonstrated by its shift in emphasis toward the development of varieties suited to specific areas. In 1985 a new variety was released for the Shire Valley, with a significant lint yield superiority over Makoka 72, and a further variety has been developed for estate production with a high ginning percentage.

The establishment of a strong technical base for cotton production in Malawi has resulted from the long period of U.K. support and from the continued commitment of the Malawi government to provide an infrastructure for research. In Malawi, unlike Tanzania, the end of CRC support did not lead to a run-down of cotton research as Malawi staff had received experience from working with the CRC and were provided with specialist training in the United Kingdom.

A similar record of effective aid is evident in the tobacco industry. Of the crop research projects set up in Malawi when budgetary aid was brought to an end, tobacco research has been the longest. Support was provided from ODA's research and development funds from 1971 to 1977, when the project was extended as part of the bilateral aid program. The project was then transferred from the Ministry of Agriculture to the newly established Malawi Tobacco Research Authority in 1980.

During the first three years of the project, it was found that the standard of management of the fire-cured crop was the major factor affecting quality. The yield and quality characteristics could be influenced by manipulating fertilizer and spacing treatments so that greater returns could accrue to the small-scale grower without increased inputs. In the breeding program, attention was paid to the diseases brownspot and wildfire, which were serious constraints to burley (a tobacco variety) production. The problem was largely solved by the release in 1976 of Banket A-1, with cultural recommendations established by agronomic trials enabling more efficient growers to double their yields.

One main thrust of the breeding program on fire-cured tobacco for smallholder production has been the development of a disease-resistant variety. A cross-breeding program was started under the project that led to the release of DRV (Disease Resistant Variety) 7. The variety resembles the old in growth habit and carries resistance to brownspot, wildfire, and mosaic virus. By 1985/86, the whole of the fire-cured tobacco area had been planted to the new variety.

The U.K. project was brought to an end in 1985. It had been sufficiently long to achieve its objectives, and the control exercised over the issue of seed enabled the breeding work to make a rapid impact as soon as new disease-resistant varieties were available. Today the Malawi Tobacco Research Authority is relatively well staffed with national scientists, and there are good facilities for work. As

in the case of cotton research, U.K. long-term support has contributed to a strong institutional base.

In maize research, however, a different picture emerges. Maize is the staple food and major crop of Malawi in terms of planted area and volume, and from the early 1970s, U.K. technical assistance was provided to improve yields and develop new maize varieties. In particular, the five-year project aimed to develop higher yielding varieties of white-seeded maize and to establish fertilizer requirements. During the first two seasons of the project, 30 varieties were tested at about 100 sites. The existing hybrid SR52 gave much the best yields, but SR52 (and its successors) are dent types not favored for food use. Compared to flint types, they are difficult to pound, susceptible to weevil damage, and store poorly under high moisture conditions. The project was remodeled to emphasize composites. Two of these, Tanzanian Ukiriguru Composite A (UCA) and Malawian Chitedze Composite A (CCA), were identified as giving improved yields at medium to high altitudes, and at lower altitudes, respectively. Both are flint types, and a program of recurrent selection was commenced to improve their yield and agronomic characteristics. They remain the only two maize varieties recommended for domestically consumed crops, and there has been little progress in maize breeding since the mid-1970s, when the ODA project ended. In retrospect, the period of the ODA project was too short; it provided no formal training and its closure in 1976 left a major gap in the national maize research work.

Seed Development

The effects of the lack of sustained U.K. aid support for maize breeding and agronomy became evident as a new seed industry was built up with maize improvement as its main component. In developing the seed industry, there were two phases of U.K. support: first, the establishment (from 1976) of a Seed Technology Unit under the Director of Agricultural Research, and second, the creation (in 1978) of the National Seed Company of Malawi (NSCM) under the Agricultural Development and Marketing Corporation (ADMARC) and CDC ownership. The forms of aid were technical assistance and capital aid for the Seed Technology Services project, and CDC loans and ODA-supported management consultancy for the NSCM.

U.K. aid concentrated initially on a technical service responsible for maintaining parent lines, field certification, and seed testing. Capital aid was given for a laboratory and buildings of a Seed Technology Unit (STU); recurrent cost support was also provided, and technical assistance took the form of a Chief Technical Officer (CTO) to establish the STU. ODA took the view in 1975 that commitments should be limited to three years, and the Government of Malawi was expected to take the STU onto its recurrent budget by 1978. In fact, by late 1977—when the CTO's contract was due to expire—equipment was still arriving, and the building work had not been completed. One item of delay had been the order for a Swiss-manufactured humidifier, which had been held up for five months while permission for a Department of Trade and Industry waiver was sought.

A request to extend the contract of the CTO was agreed by ODA, but in the meantime, a CDC mission had reported on the proposition of a National Seed Company, and CDC was looking to ODA to provide the services, under consultancy terms, of the same CTO as General Manager. On leaving the STU in 1978, the CTO stressed the need for an experienced expatriate replacement and saw a major problem of technical direction for the fledgling unit. In the event, ODA was unable to provide a suitably qualified replacement and did not press the matter as aid finance for Malawi had become constrained. In 1983, the Agricultural Adviser found that the STU still lacked a trained seed analyst and suggested that an ODA-supplemented appointment should be considered. The matter was not followed up, and no request materialized.

A more substantial U.K. investment was involved in the establishment in 1978 of the National Seed Company of Malawi (NSCM), which owns a 450 hectare seed farm, processing plant, warehouse, head offices, and cold stores. In addition to loan finance, CDC provided, to 1986, the core management of NSCM with four posts: General Manager, Company Secretary, Seed Production Manager, and Seed Processing Manager.

The Company has greatly reduced Malawi's dependence on imported seed and now exports small amounts of maize, vegetables, and rhodes grass seed. Although it has yet to achieve the shareholders' agreement target of a 15 percent return on invested capital, NSCM has made small operating surpluses in each year since its establishment. The Company is well-managed; the contract grower system is working efficiently; and (below senior management level) there has been a satisfactory development of local staff capacity.

NSCM represents a successful U.K. aid intervention. Yet seed development for smallholder production in Malawi remains at a disappointingly low level. In particular, the levels of sales of seed maize, by far the single largest commodity in which the Company deals, have grown very little since the Company became fully operational in late 1979.[7] One factor frequently mentioned within the company concerns the demand collection and distribution capabilities of ADMARC. But the low margins in seed trading that the government imposes on ADMARC inhibits the holding of large stocks at its local sales point, and CDC has been unable to influence government policy in this area. Of a more long-term importance has been the failure of the Research Department, and (to a lesser extent) the STU, to develop a range of varieties suited to the economies and consumption patterns of Malawi's *smallholder* sector. As the CDC visiting adviser noted in 1983, there is inadequate service to NSCM in new inputs of breeder seed, and this in turn reflects a shortage of qualified staff, poor maintenance of research equipment, and general lack of research funding, especially for maize breeding and agronomy research. While it is evident that the current level of efficiency of the Malawi seed industry owes much to U.K. aid in various forms, it is also the case that the industry could become more effective with a more sustained U.K. aid effort in laying the foundations for the seed industry, particularly in its main commodity, maize.

Kasungu Flue-Cured Tobacco Authority

In its initial feasibility study of the smallholder tobacco production in Kasungu, CDC emphasized that "smallholders should be at least self-supporting in food crops," and that CDC should "provide sufficient help and supervision at the start; but aim to progressively withdraw it so that the African farmer, individually or as a group, becomes more self-reliant."

CDC has now provided six loans (a total value of £ 4.16 million) to the Authority (KFCTA) since its establishment in 1970, and it has also provided management under contract. For much of the 1970s and early 1980s, there were four CDC staff members in senior positions in the Authority (General

Manager, Workshop Manager, Production Manager, and Financial Controller). In 1986, there were still two senior posts filled by CDC: Financial Controller and Production Manager.

In 1986, 900 Malawian farmers were benefiting from the opportunity to grow flue-cured tobacco, a crop previously dominated by large commercial growers. By 1985/86, 1,225 hectares had been brought under production by the Authority, producing 2,114 million kilograms of tobacco (or approximately 8.5 percent of national production), with a further 1,078 hectares under maize. KFCTA carries out a wide range of services on behalf of "smallholders" (1 hectare) and "growers" (4 hectares), including the procurement and delivery of fertilizer and chemicals; the provision of extension services; the maintenance of the road, electricity, and water services; and the organization of tobacco grading and its transport and presentation on the auction floors. The costs of such services are recovered—in theory—from tobacco sales handled by the Authority.

The tobacco schemes have had some notable successes. Yields have continued to rise steadily (from 1.19 tons/hectare average in 1971 to 1.92 tons/hectare in 1985), and both yield and selling price have been consistently higher than the national average. Against this, however, there has been a contraction in the number of settled farmers (the number fell from a peak of 1,247 in 1980 to 754 in 1984, although it rose again to 930 in 1986), and also in the cropped tobacco area (down from 2,011 hectares in 1978 to 1,226 hectares in 1986). Furthermore, returns to tobacco growing have weakened, and farmer incomes in many cases have proved a disincentive to continued production. Up to 1977, the costs of production of flue-cured tobacco were relatively low in relation to tobacco prices. After 1977, however, crop costs started to rise, and tobacco prices went through a period of marked deterioration. From 1978 to 1981, the majority of farmers were unable to generate sufficient revenue from tobacco to pay KFCTA for the cost of services and to retain an adequate income. Although from 1982 onward the majority of remaining farmers have made a profit, this disguises the fact that substantial numbers of farmers have continued to operate unprofitably and have either left the project or reduced their input into tobacco cultivation.

These difficulties for farmers have had a serious impact on the financial viability of the Authority. All of KFCTA's permanent capital has been provided through redeemable loans, mainly from the CDC. Repayment was intended mainly from farmers' accumulation of a "capital stake," whereby individual farmers were required to contribute 40 percent of their profits. In practice, most farmers were unable to pay, and in 1981 the stake system was replaced by a rental system, whereby farmers pay a rent designed to cover interest on development loans. There is at present no charge contributing to repayment of principal, which KFCTA is thus unable to meet. Similarly, the Authority has been unable to cover the recurrent costs of its operations in every year but one since 1975, and the costs themselves have risen sharply because of vacant land, farmers' losses, and the rising expense of maintaining welfare and technical services.

In 1981, the government introduced a subvention payment to KFCTA and discontinued the carryover of farmers' debts. These measures, together with an increase in tobacco prices in recent years, have improved farmer incomes. The use of input packages has increased and the high yields necessary for the continuation of the project are now being achieved—but only at the cost of an effective government subsidy.

The case of KFCTA illustrates not only the general benefits that can accrue from such a scheme, but also the problems that may arise (especially in years of poor commodity prices) and that can, as in Malawi, limit their potential for further expansion. This experience—like that of the more successful KTDA project in Kenya—shows the need for smallholders to achieve high yields to cover the relatively high costs of smallholder schemes; it also shows the close correlation between farmer incentives, production performance, and the financial viability of the scheme itself.

It is evident from the KFCTA experience that the careful design of smallholder projects undertaken by CDC does not invariably produce—even where direct CDC management is provided over a long period—the sort of successful enterprise exemplified by the KTDA in Kenya. With farmers still dependent upon KFCTA to service their tobacco crop, and KFCTA itself still dependent on regular government subventions, the initial objectives of farmer self-reliance and scheme financial viability have not been realized and the spread of wealth from tobacco production is narrower than originally anticipated.

Phalombe Rural Development Project

The Phalombe RDP has been the largest component of ODA's support for the Malawi National Rural Development Program (NRDP): the two other components have been assistance to the Blantyre Agricultural Development Division (in which Phalombe is located) and to the National Sample Survey of Agriculture. World Bank technical assistance has been important to the evolution of NRDP but the commitment of ODA was seen by the Malawi government in 1977 as critical to the arrangements of coordinated donor support for a £ 40 million program requiring £ 35 million in external finance over five years. In the 1977 U.K.-Malawi aid talks, £ 4.8 million was earmarked to NRDP, and eventually ODA became the third largest (and largest bilateral) donor.

The NRDP strategy, to which ODA subscribed, was regarded as an extension of the Lilongwe Land Development Project (LLDP) approach. A long-term commitment was envisaged, with a 20-year timescale for developing infrastructure and support services and for expanding these from the initial selected area. The term used to describe provision was "extensive" rather than "intensive," with LLDP generally seen as too high-cost and over-managed for long-term replication.

But in fact the NRDP strategy was *substantially different* from the earlier land development projects. In Lilongwe, for example, a major constraint to increased production was seen as the scattered and insecure nature of land holdings and the low level of land husbandry. The project emphasized resettlement, land registration and consolidation, soil conservation and, in places, irrigation measures. NRDP, on the other hand, identified more manageable and short-term constraints as its priorities. These have been input supply (particularly improved seed and fertilizer), credit, extension, and—in support of these—rural feeder roads, stores, and staff housing. Thus the Phalombe RDP has been essentially an agricultural services project with a "poverty focus" on the smallholder sector, which is primarily cultivating mixed stands of food crops, with only occasionally some land down to crops such as cotton or tobacco.

The decision to support aid to NRDP was taken with confident assumptions about rates of uptake of trial-based recommendations across a range of crops. Farm input costs

were expected to rise substantially (thereby necessitating new credit facilities) with a doubled output value for around 20 percent of farmers. The NRDP (and thus the Phalombe project) strategy assumed the availability of improved technologies attractive to smallholders.

In cost terms, the Phalombe RDP has been largely an extension project. The number of extension workers has been doubled, and provision has been made for staff housing and training centers. The project has also covered the costs of supporting the increased extension effort: administration, fuel and vehicles, and rents. A large part of the extension effort has consisted of credit administration, but ODA support for loans has been limited to little over £ 200,000 made available to Agricultural Development and Marketing Corporation (ADMARC) on the understanding that the equivalent value would be expended on U.K. procurement of agro-chemicals and fertilizer. Other major items of expenditure have been feeder road improvement and storage depots.

The project was designed to be incorporated into the government system. The annual project budget, covered 90 percent by ODA, has been agreed upon each year with the Development Division in Lilongwe. ODA was concerned at the outset at the recurrent cost implications of Phalombe and resisted government requests to increase provision for more posts and mileage allowances. However, the calculated internal rate of return of 12 percent assuaged some of ODA's concerns on the financing of extension expenditures. On the level of contribution to local capital and recurrent costs, ODA agreed that special circumstances allowed a liberalization of guidelines on U.K. procurement, and over 50 percent of the Phalombe allocation has been for local costs. On local *recurrent* costs, it was accepted that project posts and related allowances need not be placed on the government revenue account until the end of the financing period.

In the event, the major issue for an extension of support to the project (into a new phase and an expanded area) has been the high recurrent cost and management implications for the Ministry of Agriculture. The initial Government of Malawi request for an extension involved almost 400 new posts, 300 staff house units, and 90 vehicles. The ODA has been unwilling to countenance this request, especially, in their view, given the staff demands of a similar agricultural development project elsewhere in the District. Yet it has been the lack of confidence in the direction and likely outcome of Phalombe RDP that has raised so sharply the questions about the size of public sector employment against the returns of the services being provided.

As a 1985 evaluation of Phalombe RDP indicates, it is impossible to form a firm view of the impact of the project on agricultural output.[8] Maize production increased sharply from 1981/82, but this increase appears to have been largely attributable to price changes; and it occurred in both project and nonproject areas of the District. Furthermore, a survey in the fifth year of the project showed that only 2 percent of the maize area (as against an anticipated 8 percent) was down to the recommended hybrids and composites. On the other hand, the number of registered tobacco growers had increased, and there had been an expansion in sales of insecticides to cotton farmers. There had been also a big expansion in the uptake of credit, and fertilizer sales had increased correspondingly.

The 1985 evaluation did, however, note that crop recommendations were in general not welcomed by farmers. Extension agents also reported that, in mixed stands, improved varieties had not sufficiently outperformed local varieties to justify the attendant risks, including problems of lodging and pest damage. The major single weakness in agricultural support in the Phalombe areas has thus appeared to be in research, where trials work did not begin until 1985 and was confined to screening cowpea and pigeon pea varieties. ODA has had little technical involvement in Phalombe. It is evident that the lack of economically sound technical messages has held up agricultural improvement; the intention to frame recommendations for different "extension planning areas," for example, has meant little in practice, and a centrally determined package has remained the dominant pattern.

"Program" Grants, 1980-85

The introduction of program aid to Malawi in the 1980s occurred when the first of three World Bank Structural Adjustment Loans was under negotiation and when an IMF stand-by program, later to be supplemented by a three-year IMF Extended Fund Facility, already had been agreed. Program aid was thus first supplied at a time of unusually severe balance of payments difficulties for Malawi. The first program aid agreement of 1980 (for £ 6 million) was explicitly to help relieve a perceived foreign exchange constraint by supporting the flow of imports to sustain existing productive capacity, particularly in the agricultural sector. The second agreement of 1984 (for £ 2.5 million) was made, less explicitly, "in support of measures undertaken by the IMF and the IBRD."

Under the first grant, agricultural inputs (particularly requests for fertilizers and machinery) were favored by ODA, and the main beneficiaries proved to be government departments and parastatals. Even so, the end disbursement date for this new stream of "fast-spending program aid" had to be extended from end-September 1982 to end-September 1984. The take-up of the second program grant of 1984 was even less rapid, despite initial applications totaling £ 4 million for a grant covering imports of £ 2.5 million

Many of the initial applications for funds were subsequently withdrawn, including requests for agricultural equipment, and several large importing firms did not apply to the Reserve Bank for a tranche of U.K. program aid, as they feared this would disrupt their normal access to foreign exchange under existing arrangements. This indicated that the foreign exchange shortage was no longer severe in the 1984-85 period, and an internal ODA appraisal of the second program grant expressed doubt that the aid was relieving a critical foreign exchange position.

Conditions for the use of the second program grant were much tighter than the first. The U.K. government this time insisted that procurement should come from the private sector rather than government and parastatals, and that it should be in the form of raw materials, spares, and replacement equipment. Yet, unlike the first grant, there was no prescription of a particular agricultural input share, and, in the event, only £ 1 million of the £ 2.5 million available was related to agricultural end use. This amount was largely made up of sales to three firms: Shell Chemicals (Malawi), Farming and Engineering Services, and Agricultural and Auto Spares.

The introduction of the "private sector procurement" condition into the second program grant ignored the reality of the Malawi economy, much of which is only nominally in private hands. Furthermore, if one of the objectives of U.K. program aid had been to assist Malawian *smallholders* with a

regular supply of imported inputs, this would have necessarily involved procurement by government agencies, so that the restriction of procurement to private firms tended to reduce the flow of direct benefits to the smallholder subsector. In practice, however, a large order for Shell's *Ripcord* pesticide represented the total annual requirement of the Malawi market for the product, indicating that much would be supplied not to the private sector, but to parastatals.

Experience with five years of program aid in Malawi has proved that it can be faster disbursing than conventional project aid, but it was less fast spending than had originally been anticipated, and there was regularly pressure to elicit suitable requests for allocations in the three months before the close of each financial year in order to avoid underspending. Furthermore, as foreign exchange was not in short supply after the first two years of program grant applications, program aid also had only limited effect in filling a foreign exchange gap and directing imports into priority sectors in the spirit of the structural adjustment programs.

It is also evident that program aid had less direct impact on agriculture than anticipated. Agricultural suppliers and producers had priority access to foreign exchange under existing Malawi government guidelines, and many of the larger firms serving the estates had no difficulty in procuring imports through the normal channels. The stricter requirement to direct allocations to the private sector under the second grant had the effect of extending access to foreign exchange to small firms in transport and manufacturing, rather than to smallholder agriculture.

Agricultural Aid To Tanzania

The Colonial Legacy

Tanzania inherited a potentially strong agricultural sector from the colonial period. Research and services for sisal, cotton, and coffee production were well established, although research on food staples had not made the same progress. Partly because there was less pressure for protecting the farming interests of European settlers in Tanzania than in either Malawi or Kenya, there was earlier colonial government support for smallholder production that involved considerable intervention in the sector, including encouragement for cooperative processing and marketing arrangements.

The marketing of crops grown by Africans was initially undertaken by Asian traders, but as early as the 1920s, African coffee producers organized to break the Asian monopoly and established the Kilimanjaro Native Planter's Association (KNPA later the KNCU), the first such organizations in East Africa. With the encouragement of the Colonial Office, the cooperative movement as a whole underwent substantial expansion in the 1940s and 1950s, and some of the cooperatives were among the largest commercial enterprises under African control in the entire continent.

After 1945, a strongly interventionist policy developed toward African agriculture. Apart from schemes for large-scale mechanized groundnut cultivation to serve the needs of the British edible oils market (a *cause celebre* of its time), there were also major resettlement schemes, such as Sukumuland, based on the expansion of its cotton production. Increased emphasis also was given—against nationalist opposition—to enforcing soil conservation and livestock control regulation.

In agricultural services, the most important legacy of the colonial period was the building of an agricultural research system. The East African Agricultural Research Station was established at Amani in 1921; the Cotton Research Corporation assisted the establishment of cotton research stations; and a veterinary laboratory and livestock research station was also established on the site of a former German rinderpest serum institute at Mpwapwa.

The colonial research effort particularly benefited coffee, cotton, and sisal, and selection work was initiated on sorghum. A maize breeding program started by the Tanganyika Agricultural Corporation in collaboration with the East African Agricultural and Forestry Research Organisation (EAAFRO) had notable success in the 1950s with the development of locally adapted varieties resistant to *Puccinia polysora* rust, which first appeared in East Africa in about 1952. Despite this progress in food staples, however, the main feature of colonially administered agriculture was the considerable export base that had been developed and was primarily in the hands of African smallholders. Tanganyika was thus regarded by the colonial agricultural service as having a greater farm potential than Kenya. Furthermore, unlike Kenya and (to a lesser extent) Malawi, independent Tanzania did not inherit a farm sector in which European settlement had competed significantly with African land needs. But of particular significance was the legacy of state intervention in all areas of farming, including cultivation practices, resettlement, marketing, and price control. This laid the basis for the further extension of public regulation after independence, when radical policies to transform traditional agriculture were introduced.

Trends in Agricultural Aid

Since independence, bilateral relations between the United Kingdom and Tanzania frequently have been strained, and the U.K. aid program has also developed an erratic profile (see Table 4), with periods when new aid commitments were suspended.[9] In agriculture, the United Kingdom has not had the long-term involvement in the sector that has characterized aid to Malawi and Kenya, although two exceptions to this—cotton research and dairy development—are described below. One consequence of this relative lack of involvement has been the extent to which ODA agricultural aid decisions have been instigated by government requests for project finance in line with development policies already determined with other donors. For example, ODA has given support both to Tanzania's decentralized integrated rural development initiatives and to its grain reserve strategy. In Mtwara and Lindi regions, ODA became the lead external aid agency, and in Tabora, ODA was responsible for a land use component of a project in which the World Bank took the lead. ODA support for strategic grain reserves—the building of large regional depots—also was a main item in U.K. agricultural project aid from the late 1970s, although it became evident in the 1980s that low levels of maize output, together with a shift of policy emphasis toward village-level storage, had diminished the utility of the depots for grain storage.

Table 4
United Kingdom bilateral aid to Tanzania 1970-85 (£000) (major components, gross disbursements)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Financial Aid																
Project aid (including ATP)	—	—	—	—	—	835	147	48	1,012	8,462	19,289	16,482	15,283	21,694	15,595	10,467
Program aid	—	—	—	—	—	—	1,520	3,850	5,573	4,793	3,548	1,366	—	—	—	—
Debt cancellation	—	—	—	—	—	—	—	—	—	517	433	415	362	362	362	362
Other nonproject	—	—	—	—	—	980	895	362	5	1,148	—	—	469	150	—	—
CDC Loans	238	715	347	111	205	210	—	—	70	2,145	94	2,436	3,780	1,470	9,022	225
Subtotal	238	715	347	111	205	2,025	2,562	4,260	6,660	17,024	23,365	20,699	19,895	23,676	23,980	11,054
Technical Cooperation																
Wholly financed personnel	9	1	2	—	—	7	84	218	648	1,461	2,046	1,886	1,452	1,677	1,311	1,160
Partly financed personnel	1,764	1,378	1,362	1,342	1,194	1,750	1,293	1,454	1,501	2,507	459	377	420	662	664	641
Students and trainees	19	26	14	45	110	240	460	613	828	1,345	2,470	2,317	2,225	1,483	1,301	1,791
Other TC	—	—	—	—	2	32	41	141	726	1,739	3,779	4,761	3,336	2,885	2,975	3,321
Subtotal	1,792	1,405	1,378	1,387	1,307	2,029	1,878	2,426	3,703	7,051	8,754	9,341	7,434	6,707	6,251	6,913
TOTAL	2,030	2,120	1,725	1,498	1,512	4,054	4,440	6,685	10,363	23,559	32,119	30,040	27,328	30,384	30,230	17,967

In the case of support for integrated rural development projects (IRDPs), ODA was influenced in its assessment by the 1975 White Paper, which stressed the need for both an "integrated and decentralized approach to agricultural development." Within the Tabora Integrated Rural Development Project (TIRDP), ODA financed (between 1978 and 1984) a land resource survey that identified the nature of Kenya or Malawi in some detail. In Tanzania, the total financial commitment in the period 1970-84 was £ 27 million—well below both Malawi (£ 59 million) and Kenya (£ 78 million)—and of that £ 27 million, only £ 5 million was in the agricultural sector, primarily on two investments: TANWAT and TANSEED (see below). The main CDC agricultural interest has been in a plantation company, TANWAT, established in the 1940s to produce tanning extract from wattle. In the 1960s, CDC (faced by a declining world demand for wattle) also began production of beef, wheat, timber, and seed maize. It has been CDC policy worldwide to divest ownership of established companies such as TANWAT, but the government has been unwilling to assume responsibility for what has become a diverse enterprise.

The Tanzanian approach to socialism meant a degree of hostility to individual farmers involved in relatively high-value export crop production, and the CDC smallholder authority model was not adopted. In the 1980s, however, the deteriorating performance of crops such as sisal, tea, and coffee led the government to reconsider its attitude to the management of the agricultural export sector. In 1985, CDC agreed to finance and rehabilitate a number of estates and a factory, and the Corporation was also encouraged to prepare proposals for financing and managing a rehabilitated coffee sector.

Cotton Research

Cotton growing was introduced into Tanzania in 1904, but attempts to improve the productivity of the crop did not begin until the mid-1930s, with selection work on the mixed stock of seed then sown. This led first to the development of Mwanza Local, the first cotton variety to be developed in Tanzania, and subsequently to the selection MZ 561, which was released in 1939. In the same year, staff were provided by the CRC to organize cotton research at the Ukiriguru Research Station in the Western Cotton Growing Area (WCGA). This staff support continued untill the Corporation's dissolution in 1975, when further U.K. aid was extended until 1982. The research done in the period from 1939 to 1974 was responsible for the rapid development of the Tanzanian cotton industry. Production in the WCGA rose from 50,000 bales of lint in the late 1950s to about 190,000 bales in the early 1960s and 390,000 bales in the mid-1970s.

The most serious constraint to production identified in 1939 was the cotton jassid, and work began on the selection of jassid-resistant cottons. An important aspect of the breeding work, as with the associated agronomic research, was a program of trials on farmers' fields throughout the region to ensure the adaptability of material. The work led to the release of a series of jassid-resistant varieties from 1948 to 1959, each showing better jassid resistance, lint yield, and ginning percentage than its predecessor. A further breeding program began to confer resistance to bacterial blight by means of a hybridization program with a resistant variety obtained from the Corporation's breeding work in Uganda. A variety with greatly improved blight resistance was released in 1961.

The WCGA was then divided into two varietal zones, northern and southern. In a practice still followed, varieties with longer, finer, fiber were grown in the northern zone, where there were better growing conditions. Four additional varieties from the breeding program were released to the northern zone between 1963 and 1977, and another five to the southern zone between 1963 and 1974. The progress made in breeding was consolidated by an efficiently managed cottonseed multiplication and distribution scheme based on the strict control of seed issued to the growing area of each ginning.

Yet another disease, fusarium wilt, became a problem during the 1960s on lighter soils in the northern area. A breeding program to confer resistance to the disease was begun and led to the release in 1977 of UK 77. While the plant-breeding work was proceeding, supporting research was undertaken in agronomic practices, crop nutrition needs, and other crop protection practices. This led to recommendations on sowing dates, cross-tying of ridges for water conservation, fertilizer requirements, and crop spraying regimes. Research was also carried out by CRC staff based at Ilonga Research Station for the Eastern Cotton Growing Area along the coast. Reselections of the better-quality Uganda UPA cotton type were developed for the

area, and recommendations were made for cultural methods and pest control measures. By the end of the 1960s, cotton production had risen to almost 27,000 bales a year.

In the period after independence, cotton research was largely undertaken by the CRC. The Corporation supplied a multidisciplinary team of seven to eight research cotton workers to staff all of the senior cotton research positions at Ukiriguru and Ilonga. However, there had been little provision for local staff development at professional levels. The first Tanzanian cotton breeder and plant pathologist were not appointed until 1973, and the entomologist in 1974. Two national agronomists had worked in Ukiriguru in the 1960s but had subsequently left, and another agronomist was not appointed until 1973.

When the CRC was abolished in 1975, the government was faced with the collapse of its cotton research capability, and ODA was approached for assistance. As a consequence, two ex-CRC cotton breeders were posted to Ukiriguru (for two and four year contracts, respectively) and four other research posts were filled at different times in the duration of a project that lasted from 1976 to 1982. Training was also provided—through the British Council—for four nationals to MSc level (a breeder, soil scientist, entomologist, and a plant pathologist).

The major technical output in this period was the release for the southern zone in 1982 of a variety that produced about 15 percent more lint than its predecessor. But at the end of the period of ODA support, the national cotton program was still not able to sustain a strong research effort. In 1984, FAO attached a cotton breeder and a socioeconomist to the cotton research team, but the work of the station generally remained constrained by manpower deficiencies in areas such as agronomy and soil science. In addition, programs have been severely constrained by a shortage of operational funds and a lack of foreign exchange to purchase new equipment, spare parts, and chemicals.

Cotton production had also declined from a level of about 400,000 bales a year in the early 1970s to about 250,000 bales in the mid-1980s. Yields had likewise declined, from about 600-700 kilograms seed cotton per hectare in the early 1970s to about 300-350 kilograms per hectare in 1986. Despite the earlier advances in agronomic recommendations, a survey of six villages around Ukiriguru in 1984/85 showed that less than 10 percent of the cotton crop was effectively sprayed, and only about 5 percent of cotton farmers were using fertilizers.

A *Task Force on Cotton Rehabilitation* examined this performance in 1985. It identified constraints such as the organization and financial structure of the Tanzanian Cotton Authority, the criteria by which prices for lint and cottonseed were calculated (resulting in poor economic returns to the farmers), late payments to farmers, poor quality of cottonseed (linked to ginning), poor engineering management at ginneries, inadequate and erratic fuel supply, and deterioration of the road and rail transport system. The task force also noted that insufficient priority had been given by government to cotton research.

It is against this evidence that the U.K. contribution to cotton development in Tanzania must be seen. U.K. aid for cotton research in Tanzania through four decades provided the catalyst for the development of a major cotton industry and a sound basis for future cotton research and development. However, in 1974, eight of the nineteen research scientists at Ukiriguru were expatriates, and with the demise of the CRC, Tanzania was left with little capability for cotton research. Even by 1982, when ODA support ended, local staffing was inadequate.

In retrospect, ODA project support should have been phased out over an even longer period and stronger provision made for training national scientists. Yet it is unlikely that, on its own, the continuation of U.K. aid after 1982 would have made a substantial impact on the current poor performance in the cotton sector. Such support would not have been effective unless buttressed by a stronger Tanzanian government commitment to research and to the rehabilitation of the cotton industry (for example, in the provision and quality of planting seed and lateness of payments). The price structure and the performance of the Tanzanian Cotton Authority were clearly factors in declining cotton production and incomes, and the adverse impact of such factors has inhibited the effectiveness of a substantial U.K. contribution in research and development.

TANSEED

The Tanzanian Seed Company Ltd. (TANSEED) was established in 1972 as a joint venture between CDC and the parastatal National Agriculture and Food Corporation (NAFCO) to expand the production and supply of certified seed, particularly maize and sorghum. At that time the cereals seed industry primarily consisted of a breeding station at Ilonga, with a number of regional multiplication stations under the Ministry of Agriculture distributing certified seed mainly to its regional offices and to the Tanganyika Farmers Association. In the early 1970s, however, the U. S. Agency for International Development decided to support the establishment of Foundation Seed Farms (replacing the poorly functioning regional stations), and it effectively made the creation of TANSEED a condition of this support. Simultaneously, the government enacted seed legislation, under which the Ministry established a seed certification agency, TOSCA (Tanzanian Official Seed Certification).

The situation in the early 1970s, therefore, was that some new cultivars such as the composite UCA, had been developed; the Foundation Seed Farms (with other contract growers) were taking this breeders' seed and multiplying for TANSEED to process, certify, and market. The system was similar to the one already described in Malawi. CDC's role was also similar to its role in the National Seed Company of Malawi; although in Tanzania there was a stronger base of expertise and involvement in seed production —particularly at TANWAT, which was producing seed maize and wheat.

CDC was involved in TANSEED itself from the outset, originally holding a 50 percent share and providing a General Manager, a Company Secretary, and a Seed Production Manager under a managing agency contract. The General Manager post was localized after four years (although CDC still provides the Company Secretary), and until 1986 the post of Seed Production Manager was also held by a CDC appointee under World Bank financing.

The company established four processing plants—at Arusha, Iringa, Morogoro, and Njombe—with a total annual production capacity of 9,000 tons. Four years after its establishment, TANSEED sales were 5,224 tons (1976/77), but the annual sales figure then fell back to a low of 3,922 tons in 1982/83; although a recovery followed, the figures for 1983/84 and 1984/85 were still only a little over 5,000 tons.

Nonetheless, TANSEED appeared to be trading successfully until 1982/83, although a CDC mission found that

earlier profits were largely of a book nature, and that there had been the failure to make provision in the accounts for losses on seed stock that were no longer saleable. The deterioration in TANSEED finances has continued, with increasing debts, as well as difficulties in meeting payments to contract growers and service equipment. Seed processing and packaging in particular has suffered from machinery failure, although both Dutch and Canadian aid is now being provided to rectify this.

The question is how far this apparent failure of the seed industry can be attributed to a range of wider factors affecting the agricultural economy (suppressing both the demand for seed and the efficiency of its supply), or how far the failings can be attributed to the industry itself and the way it has been managed and supported--or not supported--with external assistance.

The main U.K. support to the industry has been in TANSEED itself, but the problems of TANSEED cannot be divorced from other difficulties in the industry—particularly those in quality control, retailing, and seed production. For example, the USAID-supported Foundation Seed Farms were run inefficiently, and when the project ended a large proportion of the mechanical equipment was in need of refurbishment. The Government of Tanzania felt that the scale and cost of the Foundation Seed Farm operation (when set against its seed output) could not be sustained without external grant support and TANSEED was approached (unsuccessfully) with a view to the company taking direct control.

Meanwhile, TANSEED was having difficulty with its own contract growers, who were unattracted to the prices paid by the company, especially compared to prices the same grain could attract on the parallel market, and who were confronted by late and irregular payments. But it is on the retail side of the seed industry that the most serious problems have occurred. Although a CDC Review Mission found that the overall quality of TANSEED seed was "not especially bad," there was a widespread perception among farmers that seed originating from TANSEED is of poor quality with unreliable germination. This quality problem was largely attributable to deficiencies in stock control and management under the Regional Agricultural Development Officers (who are the main outlet for TANSEED with the declining national role of the Tanganyika Farmers Association). According to the CDC mission, seed was often poorly stored, held over without retesting, and occasionally incorrectly labeled.

Such shortcomings in management are compounded by the difficulty of operating a seed industry in Tanzania. Unlike the National Seed Company of Malawi, TANSEED has four factories to manage, and its seed producers often are far from the processing facilities. There also are major distribution difficulties related to Tanzania's size and deteriorating transport systems. Moreover, Tanzania's postharvest period—unlike Malawi's hot and dry postharvest season—is generally humid, making storage correspondingly more difficult.

The poor trading performance and weak management of TANSEED led CDC to conclude that, without a substantial injection of new capital, the company cannot become financially viable. But such an injection has been difficult to justify while other components of the seed industry are underperforming and thereby suppressing any significant increase in demand. As in the Malawi case (which is a more successful U.K.-aided industry), it is evident that CDC could have a major role to play in the establishment of a structure for a publicly controlled yet commercially viable seed industry. But the potential effectiveness of CDC depends largely upon the successful establishment of other parts of the industry, including activities such as plant breeding and farm input supply services.

U.K.-Based Scientific Support: Armyworm Control

U.K. support for African armyworm research and development in Tanzania (and Kenya and Uganda, in fact) is an example of aid funds being used to support (home-based) scientific expertise—in this case ODA's Tropical Development and Research Institute (TDRI). Like the desert locust, armyworm is a migrating pest, and its control requires regional cooperation. Thus in 1961 the East African Agricultural and Forestry Research Organisation (EAAFRO) was the initial focus of U.K. involvement, and ODA's former Anti-Locust Research Centre participated from 1966 to 1971 in an Armyworm Research Project that established an "embryo" forecasting service in East Africa to warn farmers when they could expect infestations.

In continuing work at TDRI in the United Kingdom, the components of the female sex pheromone of the armyworm moth were identified in the 1970s, and a synthetic pheromone was shown to be an effective attractant in traps. Large numbers of pheromone dispensers subsequently have been provided by TDRI for an extensive trap network in East Africa that, together with data on wind systems, enables the forecasting of primary outbreaks in recognized areas at particular times of the year. The rate and direction of subsequent dispersion to form secondary and tertiary epidemics can also now be predicted.

In controlling armyworm, TDRI scientists in 1977 launched a new program of ground and aerial spraying involving several countries, including Tanzania. In addition to four TDRI staff members located at the Desert Locust Control Organisation headquarters in Nairobi, there is also an ODA-supported program of armyworm control in Tanzania, with two TCOs attached to the Plant and Crop Protection Services Department of the Ministry of Agriculture in Tanzania.

Training of national personnel at all levels is a component of the control program, and in this area of work the capabilities of TDRI are particularly evident. The training unit of TDRI organizes, at the regional and district level, courses for trap operators in the biology, detection, reporting, and control of armyworm. Extension aids have also been prepared and include an African armyworm training package for the Ministry of Agriculture.

Integrated Rural Development Projects (Mtwara and Lindi Regions)

The Mtwara-Lindi U.K. aid program consisted primarily of an attempt to support regionally based planning and implementation. The main impetus to external aid to IRDP's generally was decentralization policy and regional equity considerations (which led to the establishment of Regional Development Directorates) rather than agricultural development *per se*.

In 1975, a U.K. aid mission led by the Minister, Judith Hart, agreed to support broadly based rural development in the remote and poor southeast regions of Mtwara and Lindi. Following up this decision, an identification mission visited the area but could not see any immediately supportable projects beyond road maintenance, rural water supply, and (drawing upon existing commitments) research

and development in oilseeds. This mission suggested the appointment of two TCOs, largely to develop stronger proposals. The Prime Minister's Office (which had responsibility for IRDPs) did not regard this as a suitable ODA response and emphasized the existing guidelines for donor support for IRDPs. These different views were reconciled in the 1977 "Reconnaissance Mission" that led to the Regional Development Technical Co-operation Programme.

The natural resources component of the program included resource survey work undertaken by ODA's Land Resources Development Centre (LRDC) and a number of small projects that were identified and implemented as a result of U.K. aid involvement in the regional planning exercise. In this respect, Mtwara-Lindi—like EMI in Kenya (see below)—represents an aid "strategy" for difficult environments. Put simply, this strategy involves placing technical assistance staff to work within decentralized government structures, partly in order to strengthen planning and executive capabilities and partly in order to discover any specific aid opportunities that are less than evident at the onset of the program. In Mtwara-Lindi, the initial TC appointments meant an implicit commitment to identify crops and livestock projects; subsequently, fisheries staff were also appointed with a similar commitment.

Projects in all sectors were approved within the framework of the regional plan or the annual capital budget for each region. The main capital expenditures were on the Veterinary Investigation Centre (£ 75,000), rural water supplies, and village stores. By 1980, 25 projects—most under £ 50,000—had been approved. Few of these projects involved any ODA contribution to local recurrent costs, and the planning program itself financed only a small number of incremental local posts and allowances. Nonetheless, even this relatively small United Kingdom contribution to recurrent costs could not be matched by the government, and often the planned Tanzanian contribution failed to materialize. A number of initiatives—such as the poultry feed mill, the hatchery at Mtwara, and the tractor hire unit—suffered from the inadequate local provision of staff, fuel, and water supply.

The range and scale of small projects instigated was generally unsatisfactory to visiting advisers and TCOs in the regions, who felt that any significant long-term improvement in natural resources was unlikely until the overall system of government agricultural support was improved. This view was accepted by the 1981 Review, which stressed the importance of addressing constraints in extension, research, and credit and inputs delivery.

In the original project submission, "substantial increases" in marketed output of cassava were envisaged; rice could be "expanded greatly," and there were "good" prospects for introducing improved sorghum varieties. The 1981 Review team saw the scope for an extension program in crops (and livestock) as "recommendations already exist." As a result of this confidence, the second major phase of Mtwara-Lindi was closely linked to decisions on a proposed Extension and Training Programme (ETP). This came to be regarded as the "core project" of ODA natural resources aid in Mtwara-Lindi, and it was recognized that this would involve a relatively high level of support for staff, vehicles, and buildings for the Ministry of Agriculture's field operations. But by 1984, the case for the ETP had collapsed. Reviewing the evidence from LRDC and from the TCO Agronomists on existing practices of land preparations, fertilizer use, seed selection, disease control, and agronomic practices, ODA concluded that "there are no extension packages that would markedly improve farmers' living standards," and the individual practices proposed would be of "insufficient merit to justify an extension of the (crop) extension service."

Rather different issues were raised by the performance of the crop research program. With ODA assistance, the Naliendele Research Station was given national responsibilities for research on sesame, groundnut, and sunflower. Yet it was located in an inaccessible area with difficult working conditions. For example, in the early 1980s, the majority of field trial results were lost due to transport difficulties in reaching sites at the appropriate time. In the case of sunflower, it was evident that the crop was performing poorly compared with trial locations at higher altitudes, and in due course a new project, supported by ODA, relocated sunflower research at Ilonga.

By 1987 the level of ODA agricultural aid overall in Mtwara-Lindi had been reduced to a few small programs: a pilot extension services project for goat husbandry, collaboration with several other donors on health services for cattle, a fisheries survey, and trials and demonstration work on rice on a few valley-bottom sites. There was no longer any involvement in the "institution-building" area of regional planning and implementation capacity.

This reduction in the scale of ODA support was deliberate. It had, in effect, moved away from the IRDP approach to what it termed "project oriented interventions." It was not surprising, therefore, that the form and level of ODA support became a bone of contention with the Tanzanian government. The government had anticipated ODA support for the RIDEPs, which were a centerpiece of the National Five Year Development Plan. The ETP, in particular, became a major indication of ODA intentions, and its subsequent rejection was a source of some acrimony.

Without a substantial aid program, ODA's contribution to strengthening regional government generally became peripheral, although in practice, this aspect of U.K. aid had never been a satisfactory component of the Mtwara-Lindi program. At least one senior officer involved in strengthening local capacity was reported to have had "negative working relations" with the Tanzanian counterpart; and the process of plan preparation became largely an expatriate exercise. Furthermore, the regional planning units remain weak professionally, with frequent transfers of local staff.

At the outset, insufficient consideration was probably given to the most appropriate form of ODA support, particularly in the natural resources sector. Unlike EMI, (see discussion below), Mtwara-Lindi was not a series of relatively well-prepared and restricted technical interventions reflecting U.K. expertise—although it eventually became closer to this; unlike Phalombe, it did not represent an endorsement of government agricultural service and input supply initiatives in a specific area. In the circumstances, it was inevitable that the program suffered from the different U.K. and Tanzanian perceptions of ODA's role.

Program Aid

The main current instrument of U.K. support for the agricultural sector in Tanzania is via program aid, which is intended as a prelude to more direct agricultural assistance. The United Kingdom's position is that government policy changes encouraging private enterprises, switching resources from social services into production, and managing the exchange rate at a level that makes exporting attractive to agricultural producers, constitute the conditions for a new period of U.K. aid *project* funding. In early

1987, an offer of an additional £ 25 million aid grant over a three-year period was made, of which £ 12 million was earmarked from development projects with priority given to the agricultural sector.

This marked a significant shift in aid policy toward Tanzania, following a period in the early 1980s when few efforts had been taken to instigate U.K. aid initiatives. On the U.K. side, the aid stand-off had been partly influenced by poor diplomatic relations following earlier disagreements over U.K. intentions in Zimbabwe and U.K. policies to bring about change in South Africa; but there was also ODA disapproval of government economic policies which extended to reservations on the forced nature of villagization, and to exasperation at Tanzania's refusal to abandon state controls, notably in the agricultural sector.

Tanzania established its own domestic structural adjustment program in 1982, and in 1984 conceded large increases in producer prices for both food and export crops. But while the government refused to accept IMF-recommended economic policy changes, the United Kingdom—with others—refused to provide program aid or to initiate new capital projects. This was altogether a much more robust use of program aid in support of policy reform than in either Kenya or Malawi. The issue eventually hinged on a matter as specific as the size of the agreed Tanzanian devaluation, and it was after an IMF agreement was signed, in 1986, that the United Kingdom allocated the first £ 10 million tranche of program grant to support "essential imports."

Of this allocation, £ 3.74 million was directly for the agricultural sector—agricultural chemicals, veterinary drugs, and small diesel engine spares—and the remainder for road and rail transport. Given the benefits to agriculture of improving marketing efficiency and the supply of agricultural inputs by road and rail, most of the program aid allocation can be deemed to be directed toward supporting the agricultural sector.

Agricultural Aid to Kenya

The Colonial Legacy

In Kenya, European settlement and colonial administration had a much more profound effect on African agriculture than in either Tanzania or Malawi. For most of the period of colonial rule, there was a major program of land alienation leading to a rapid growth in European commercial farming in the Central Highlands. This, in turn, stimulated the establishment of agricultural research laboratories and other services. Most of these services (for example, in veterinary and artificial insemination work and in the processing of export crops) were later of major importance to the growth of African commercial farming. Kenyan agriculture also benefited from a regionally established research system. The East African Agriculture and Forestry Research Organisation (EAAFRO) and the East Africa Veterinary Research Organisation (EAVRO) were established at Muguga in the early 1950s and eventually became the Kenya Agricultural Research Institute (KARI) in 1977.

Yet, because of settler pressure on the colonial government, African smallholder production was generally neglected in comparison to neighboring Uganda and Tanganyika, for example. It was not until the 1950s that major initiatives were undertaken on African export crop production, and that, in particular, restrictions on such productions were lifted.

It was in farm planning and land consolidation that colonial initiatives in the early 1950s were to have their greatest impact. One such initiative (in Rift Valley province) developed a model of "balanced farming" on holdings of around 4 hectares that eventually provided one of two main props of *The Plan to Intensify African Agriculture* (the Swynnerton Plan) in 1953. The other prop was the reform of customary African land tenure, with land registration seen as an essential condition for African agricultural development. The central feature of the Swynnerton Plan was the issue of land titles, starting with the consolidation of holdings in higher potential areas capable of sustaining mixed farms with some export cropping where appropriate.

It was the increase in smallholder tea and coffee production that had the greatest long-term impact on African agriculture. Until the 1950s, tea had been a plantation crop, and the companies had set up and financed their own Tea Research Institute at Kericho. The industry was not initially convinced of the viability of smallholder production, but by the early 1960s, it had become more committed to smallholder production and participated in the financing and management of smallholder production and participated in the financing and management of new factories. The main period of investment followed, with the CDC and the World Bank financing both field and factory development under the Kenyan Tea Development Authority (see below).

With an estimated 15,000 growers, coffee was already a smallholder crop by the early 1950s, but it was confined to areas remote from European plantings (to avoid infestation and crop theft). Subsequently the number of smallholders rose to an estimated 250,000 in the 1980s. Thus development began in the colonial period through the efforts of the Departments of Agriculture and Co-operative Development, especially in nursery establishment and pulpery construction. Coffee research was undertaken at the National Agricultural Laboratory (partly financed by an export cess), and a spraying program for berry disease was instigated. After independence, responsibility for research passed to the Coffee Research Foundation.

These colonial policies led, from the late 1950s to the mid-1960s, to substantial increases in marketed output in areas subject to land consolidation and expansion of export crop cultivation. With the approach of independence, however, the transfer of ownership of land in the "European Highlands" became the most important issue of agricultural policy. Beginning in 1960, the Land Transfer Programme (LTP) financed the process of buying mixed farms and, through the Land Settlement Department, the subdivision of plots and the settlement of African smallholders. The initial thrust of policy was "high-density settlement"—with priority given to the landless and with the British government ultimately providing finance to compensate the European farmer. But "low-density settlement" on larger units attracted additional CDC and World Bank finance for relatively progressive farmers and, in some cases, land was acquired for commercially-managed "national farmers" under an Agricultural Development Corporation (ADC) that was established in 1965 and that continues to manage a number of seed and pedigree stock farms (see below).

Trends in Agricultural Aid

Land Transfer Programme (LTP) funds continued until the mid-1970s and in financial terms dominated the U.K. aid program. In the 1966, 1970, and 1973 Aid Agreements, the LTP continued to constitute the largest single item (some £ 23 million out of a total of £ 46 million of capital aid). With the phasing out of the grants for land purchase and settlement, there was some expansion of project aid commitments (see Table 5). In volume terms, CDC loans contributed the major share of agricultural project aid since the early 1970s, with the main bulk of investment in tea, coffee, and sugar. The only major new CDC commitment in the 1980s, however, has been equity finance to the National Oilseeds Development Company, with private capital and management from East African Industries (part of the Unilever Group).

There has been a greater CDC concentration upon smallholders in Kenya than in either Tanzania or Malawi. The contribution to the Kenya Tea Development Authority (KTDA) is discussed below. CDC support for the coffee industry, like that for tea development, has been mainly through developing processing facilities; new pulperies have been constructed or improved for the 140 smallholder cooperative societies involved in coffee marketing. The other major CDC agricultural investment has been in sugar. In 1976, £ 5.4 million was committed to a factory extension and to road building within the area under cane, in the higher rainfall parts of western Kenya, where some 28,000 cane growers were supplying the factory at Mumias.

CDC's role as a "venture capitalist" in Kenyan smallholder agriculture is less important that it once was. Kenya's tea and coffee industries are now well established and close to their limits in terms of land development; Mumias will shortly meet most of Kenya's sugar requirements. CDC's role in "institution-building" is also now less important. In any event, it is necessary to distinguish between the various crops: in the case of tea, there has been considerable CDC influence in the design of the KTDA and its early period of management; in the case of the Mumias Sugar Company, a U.K. private consultancy (Bookers International Agricultural Services) has been responsible for design and management, with CDC simply in a financial role; and in the case of coffee, CDC has not been a major influence on either the design of the institutions to assist smallholder production or the management of the industry.

Another feature of the shift into *project* aid support for agriculture in the 1970s was the emphasis upon specific *research* initiatives. Previously, U.K. aid provided budgetary support for both EAAFRO and EAVRO. In EAAFRO, except for work on crop virology, all of the new research projects were of short duration (3-6 years). As a consequence, scientific work was frequently passed on to a small number of experienced Kenyan scientists with limited funds. The examples of maize and potato agronomy are discussed below, and both indicate the limitations of project aid in support of agricultural research.

There has, in fact, been a substantial decline in U.K. support for crop research in Kenya. By 1975, twenty-four TCOs were engaged in various aspects of research, but by the mid-1980s, the main area of work was confined to pest management, with ODA's research and development funds for crop research of "regional" application increasingly concentrated in the United Kingdom itself. In the case of *animal health* projects, on the other hand, R and D funds have continued to be directed largely to Kenya and have helped to maintain the strength of the former EAVRO. There also has been a major input into research on East Coast Fever (see below) where long-term project support from ODA has alleviated a difficult staffing and budgetary situation in the veterinary research services.

ODA agricultural aid has been deployed in support of poorer agricultural regions, particularly those with low and erratic rainfall. The main direct involvement in drylands projects began with participation in the Second National Livestock Development Project in 1975. The ODA component consisted of livestock marketing, but little progress was made in increasing commercial off-take from the pastoral areas, and the World Bank-led project was wound down in 1982. More recently, ODA's involvement has been through the national Arid and Semi-Arid Land (ASAL) Programme, under which the three districts of Embu, Meru, and Isiolo (EMI) are supported by what could be termed an ODA integrated rural development project consisting of

Table 5
United Kingdom bilateral aid to Kenya
1970-85 (£000) (major components, gross disbursements)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Financial Aid																
Project aid (including ATP)	6,166	4,118	3,653	2,329	1,926	1,912	1,715	4,512	5,510	7,563	6,792	10,610	8,754	11,419	16,806	12,002
Program aid	—	—	—	—	—	—	2,150	1,032	8,562	2,816	456	6,910	8,459	3,283	1,204	103
Debt cancellation	—	—	—	—	—	—	—	--	2,100	3,646	4,035	4,832	5,126	5,103	5,079	4,929
Other nonproject	42	—	1,458	1,086	2,304	810	2,161	—	1	1	—	537	557	118	148	232
CDC Loans	1,620	2,810	1,028	3,512	7,606	1,949	6,408	4,273	7,277	7,843	10,164	4,492	5,499	2,986	2,725	5,606
Subtotal	7,828	6,928	6,139	6,927	11,836	4,671	12,434	10,217	23,450	21,869	21,447	27,381	28,395	22,009	25,963	22,873
Technical Cooperation																
Wholly financed personnel	227	230	231	237	310	332	472	476	750	804	939	1,130	837	1,106	1,296	1,627
Partly financed personnel	2,743	2,419	4,035	3,042	3,529	3,339	7,011	4,579	5,838	7,840	6,548	4,775	3,916	3,539	3,181	2,121
Students and trainees	154	176	191	276	286	407	522	611	710	901	1,709	1,731	2,311	2,930	3,950	4,880
Other TC	147	66	42	386	474	724	562	469	532	791	591	4,668	1,991	2,270	3,172	2,937
Subtotal	3,271	2,891	4,499	4,741	4,599	4,802	8,567	6,135	7,830	10,337	9,786	12,304	9,055	9,845	11,599	11,565
TOTAL	11,099	9,820	10,638	11,668	16,435	9,473	21,001	16,352	29,180	28,560	31,233	39,685	37,450	31,854	37,562	34,438

several components, including health centers and minor roads. EMI is discussed below.

There has been a substantial decline in the number of agricultural projects supported by ODA in the 1980s. This is only partly a reflection of the reduced opportunities for CDC investment. More importantly, ODA support for agriculture shifted, after 1982 in particular, toward program aid directed to foreign exchange difficulties within the agricultural sector. This eventually became termed "Natural Resources Private Sector Project Aid" (see below), which provided £ 6.5 million primarily for agricultural machinery and spare parts from U.K. suppliers. This was also held to be ODA's contribution to a coordinated donor effort led by the World Bank in support of policy reform in Kenyan agriculture.

A related shift of emphasis was toward "sector aid," which in practice has meant a package of aid instruments (including program aid) designed to improve the weak commercial performance of the ADC established in 1965 (see above). Over £ 4 million was awarded to ADC on condition that it implement an agreed divestiture program and concentrate upon trading and production activities that could not be adequately undertaken by the private sector. These activities included the production and distribution of seed maize; breeding stock and replacement machinery, as well as technical assistance, have been provided.

Project Aid for Agricultural Research: Maize and Potato

After budgetary aid to research institutions ended in the 1960s, ODA instigated a number of specific research projects. These included the Maize Agronomy Project, which ran initially from 1968 to 1971, but was subsequently extended in phases until 1978; and the Potato Research Project, which ran from 1970 to 1976. As elsewhere, such relatively short-term periods of U.K. support failed to establish programs and institutions capable of sustaining themselves without external support.

It was not until the mid-1950s that a systematic breeding program was started in maize at Kitale (in 1955) for a late maturing variety, and at Katumani (1956) for an early maturing variety. Several hybrids were developed, but there was little immediate adoption by smallholders, and ODA was asked to support a project to investigate the agronomic and physical characteristics of new hybrids and to recommend measures to improve yield performance and farmer returns from maize cultivation.

The ODA-supported work was confined to Kitale and was successful in several respects. By 1975, most farmers in the area with 8 hectares or more had land under hybrids, and on-station trials showed potential for substantial yield improvements. In both the Kitale area and elsewhere in Kenya, however, smallholder production of maize remained well below yield expectations. An evaluation for ODA in 1984 concluded that the project had concentrated too much on achieving record results at the expense of applied agronomic work in smallholder conditions, and that insufficient support had been given to strengthening national research capability.[10] In particular, the government-funded regional maize agronomy units contributed little to research output. Since the end of the ODA project, maize agronomy research at Kitale has continued, but shortage of funds and frequent staff changes have severely constrained activities. This has meant that a further project has become necessary (with USAID support) to strengthen national maize research capability.

In the potato research project, the aim was a breeding program to provide both (a) new and better varieties resistant to blight and other diseases and (b) the information necessary for the control of bacterial wilt resistance. The research station at Tigoni was designated as a Potato Research Station in 1972, and it was here that a disease-free center was developed for raising and screening seedlings for blight resistance and for multiplication purposes. A new variety, selected from hybrid seed supplied by the Scottish Plant Breeding Station, was officially approved for commercial production and released in 1973 under the name Kenya Baraka. In 1974, five further clones were bulked up and certified from virus-free stocks.

ODA ended support for potato work in 1976, when it was considered that an effective commodity research station had been established. Potato research in Kenya has, however, deteriorated since 1976. Once again, funds have been inadequate, and the station has reported breakdowns in its tractors, cold stores and irrigation system. In addition, staff have often left for more remunerative posts with better facilities, such as the Coffee Research Foundation. In terms of building local research capacity, the ODA project might well have not existed.

Theileriosis (East Coast Fever) Research

U.K. aid for research into the cattle disease, East Coast Fever, has involved the sustained use of specialized expertise in support of a national research program, which in this case has been supplemented by postgraduate training and by support for field extension of the research results.

Theileriosis is a complex of diseases transmitted by ticks. In eastern and central Africa, *T. parva*, which causes East Coast Fever (ECF), is the most prevalent, with an estimated 0.5 million cattle dying annually from the disease, as well as losses from reduced growth and fertility. The first attempts to control ECF came during the colonial period with attempts at the mandatory dipping (or spraying) of cattle with acaracides in disease-prone areas together with regulations on cattle movement. However, such measures were, and remain, difficult to apply on a national scale and, in the pre-independence period, an immunization method was developed whereby animals were infected and the development of the disease was blocked by treatment with tetracyclines administered in the incubation period.

This infection and treatment method was further developed after independence in an FAO/UNDP Tickborne Diseases Project at Muguga, and in the 1970s the Veterinary Department approached ODA to conduct investigations prior to establishing a field program. These investigations covered the effects on the productivity of immunized cattle, the possible discovery of strains of *T. parva* that did not cross-immunize, the danger of the treatment leading to carrier animals that would spread the disease, and the overall practicality and safety of the method itself. Two ODA projects were established at Muguga—one concerned with the epidemiology, the other with the therapy of the disease. There also has been substantial ODA support for training animal research scientists at Muguga, including Ph.D. work in virology and protozoology supervised by project staff.

As a result of this work, the infection and treatment method was adopted, and recommendations were released for two drugs for therapeutic purposes. Following up this work, ODA agreed in 1985 to support a team at the Veterinary Department that is responsible for an extension program of ECF treatment among stock-keepers.

Smallholder Export Crops: KTDA

The development of smallholder tea production in Kenya through the Kenya Tea Development Authority (KTDA) is generally regarded as one of the major successes in tropical agricultural development. In fact, it was the Department of Agriculture's work in the 1950s on a number of small, subsidized, and closely-watched pilot schemes in Central province that encouraged, first, the establishment of a Special Crops Development Authority in 1960, and subsequently, the large leap into what is now an industry of 145,000 smallholders providing green leaf to 39 factories operating without subsidy.

Much of the success of KTDA can be attributed to the Department of Agriculture SCDA period, and to subsequent work by U.K. technical officers attached to the KTDA. This work included, most notably, the development of the "two leaves and a bud" plucking regime, which did so much to establish the premium quality of Kenya tea, and the extension to growers of vegetative propagation techniques.

CDC provided loan finance to the SCDA and the successor to KTDA, but it was the Department of Agriculture, not the CDC, that was the main architect of KTDA, a forerunner of similar smallholder crop authorities. CDC's involvement in KTDA management was also less intensive than in other smallholder projects subsequently. For example, the General Manager post was never held by a CDC officer but successively by British colonial administrative service officers until the first Kenyan General Manager was appointed in 1969.

Yet, loan finance apart, CDC had an important role in the rapid expansion phase of KTDA in the late 1960s and early 1970s. For example, CDC was particularly insistent on the establishment of the growers' committees, which eventually assumed ownership and control over the factories; and it was a CDC accountant who developed the computerized system that handled anything up to 200 delivery slips in a season from individual growers and still managed regular monthly payments. Under Kenyan management in the 1970s, the KTDA successfully extended its function into factory management and domestic tea marketing through its subsidiary company, Kenya Tea Packers. Furthermore, while other public agricultural agencies were going through periods of damaging cost escalation, KTDA maintained relatively high levels of operating efficiency.

The success of KTDA cannot be put down entirely to effective management. The rise in incomes to smallholder tea growers over the period as a whole is also attributable to the good natural growing conditions, the generally favorable prices for Kenyan tea on the world market, and the support of an estate sector that provided a strong technical base for tea research and development at both the field and factory levels.

Yet CDC's involvement in the management of KTDA has been important to its success. CDC has had a major influence in maintaining the importance for KTDA of its commercial autonomy, its generation of revenue from its own (rather than government) cesses, and its accountability to growers. These management characteristics have been difficult to establish elsewhere, as the Malawi evidence has shown.

Embu-Meru-Isiolo (EMI) Districts Programme

The emphasis on poverty alleviation in the mid-1970s focused attention on the drier regions of countries such as Kenya, where agricultural production and incomes lagged behind more favored, wetter regions. Following the earlier Special Resource Development Programme (SRDP) pattern of donor-designated areas of operation, the government began seeking support for selected dryland districts in 1977, by the launch of the 1979-83 Development Plan, it had in place agreements in principle to finance a series of "regional rural development programs." ODA agreed to support what became the EMI Districts Programme, which meant, in practice, poorer areas of the marginal cultivation and nomadic pastoralism. ODA advisers accepted that the main thrust of agricultural aid spending should be on soil and water conservation, forestry, and stock improvement, but they wanted to ensure that projects were carefully prepared in collaboration with the district authorities.

The ODA approach to Arid and Semi-Arid Lands (ASAL) therefore developed into a slow build-up of specific interventions largely under the supervision of TCOs. In the first three years of the program, the main responsibility for preparing projects (and ensuring their incorporation into central ministry and district budgets) fell upon a TCO appointed to the post of Adviser to the Provincial Planning Office for Eastern province, in which the three districts lie.

The initial work on soil conservation was based on a small catchment in lower Embu, with earthworks to reduce run-off into farmers' fields. With an engineer and land-use planner in post, a program of research and development began in four catchments linking physical works to on-farm conservation and rehabilitation measures (including afforestation) in collaboration with farmers. The training of field staff in soil and water conservation planning was also part of the ODA program, and these activities were continued into a second phase (from 1986) that was termed the "dryland farming" project.

The forestry work involved tree planting, nursery development, and research into species and planting methods. Support for stock improvement has meant the development of a sheep and goat breeding center that has led to sales of animals (hopefully with greater disease resistance and faster growth rates) to local farmers, some of whom have been trained as out-breeders. ODA has been unable to identify any significant initiatives for cattle or camel development—apart from some finance for post-drought restocking and a number of investigations in Isiolo on grazing management and water development.

Given the relatively modest level of U.K. aid in the EMI Programme, there have been some significant achievements. A number of physical changes are attributable to ODA support: the goat and sheep station, soil and water conservation works, and forest nurseries. But the main achievement has been the enhanced capacity of line departments in Meru and Embu districts to undertake technical work in support of farmers. Financial aid supported by long-term technical assistance and consultancy (much of it based on the work of LRDC staff) bolstered the work of the Departments of Agriculture (in soil conservation and agronomy), Livestock Development, and Forestry.

The conditions for such institutional strengthening appear to be twofold: recognized U.K. competence (which permits acceptance of expatriate manpower) and technical interventions that are appropriate to field services capability and management. It is because such conditions are lacking that it is difficult to envisage, at present, any similar institutional strengthening in the animal health and range management services in Isiolo district. However, in the one explicit "institution-building" component of the program, ODA has not been particularly successful. The post of Adviser to the Provincial Planning Office was designed to

develop the capacity of district and provincial authorities to effectively manage a decentralized planning system; but there is little evidence that planning capacity has been enhanced or, more to the point, that decentralized planning has become an effective instrument of policy.

A more narrow form of institutional development is represented by EMI, whereby ODA support to technical services has enhanced their capacity to address local constraints. This form of support is much more a feature of ODA's involvement in EMI than in ODA-assisted integrated rural development projects in Kenya and Tanzania; in Malawi, there has not been the technical assistance support, and in Tanzania the large volume of technical assistance generally has not been incorporated into the day-to-day work of technical departments. The lessons of EMI, therefore, are not confined to IRDP-type projects; they also suggest some U.K. strengths more generally in the provision of agricultural technical services.

Natural Resources Private Sector Aid

U.K. aid for "natural resources private sector projects" is, in effect, program aid by another name. In 1982, the United Kingdom met Kenyan requests for balance of payments support with a £ 2.9 million foreign exchange allocation for the purchase of essential imports for the agricultural sector. This was the beginning of what was later termed Natural Resources Private Sector Project Aid, which in 1985 was to provide a further £ 6.5 million for imported agricultural inputs. Both operations were regarded as "projects," rather than as program aid, which they more typically represented. However, these operations, though quite unlike conventional project aid, were directly targeted on specific private sector demands for agricultural imports—in contrast to the £ 15 million allocated as program aid in 1975 and 1976 for a range of U.K. capital goods and to offset repayments on land transfer loans.

This earlier aid had been subject to an ODA evaluation which found that, in the absence of a foreign exchange problem, it was not adding to Kenya's U.K. imports and may simply have been displacing commercially financed orders. The more recent batch of natural resources private sector aid allocations had their origin in different economic circumstances, and they were linked to adherence to the terms of the new IMF standby agreement and the release of funds under the World Bank's second Structural Adjustment Loan (SAL II).

When Kenya requested new emergency assistance at the end of 1984 to cope with the severe drought, the pattern had already been set. The United Kingdom responded with a package of £ 6.5 million of natural resources import financing to be directed to the private sector. The content of the goods was specified: agricultural spares, fertilizer and other agricultural chemicals, veterinary drugs, and "other mutually acceptable imports." Most of the capital equipment was intended to be for replacement use (pumps, diesel motors), on the grounds that it would have a less displacing effect on commercial orders, and a more direct effect on relieving bottlenecks.

Unlike the 1982 allocation, however, the provision of natural resources inputs aid was not specifically linked to the government's adherence to an IMF standby or a World Bank SAL. The aid was offered as the United Kingdom's "contribution" to structural adjustment, in which operation the World Bank was acknowledged to be the lead donor. But ODA's objective was to supply fast-disbursing drought relief which it did not wish to be hedged around by multilateral conditions beyond the capacity of the Kenyan government. An example of these conditions was World Bank insistence on liberalization of grain marketing, which ODA did not regard as an appropriate issue on which to base bilateral aid allocation decisions. In the event, Kenya coped with its drought better and more speedily than its neighbors; and after failing to resolve its disagreement with the World Bank over grain marketing, Kenya did not take a third SAL.

Disbursements under natural resources private sector aid proved slower than expected, due to lack of immediate demand and a lessening of the foreign exchange shortage after 1985, as coffee and tea export prices enjoyed a boom. In this context of relative foreign exchange abundance, the terms of the aid appeared unattractive. Credit terms for local purchasers were more onerous than under normal commercial arrangements, and in addition they were obliged to procure through a third party, the Crown Agents.

In these circumstances, the targeting of program aid on a particular sector or end-user had only limited relevance. As shown in ODA support for the ADC, earmarked foreign exchange can alleviate the difficulties of particular agencies and facilitate the introduction of new measures. Yet taken overall, the main effect of natural resources private sector project aid had been simply to expand the foreign exchange resources available to government and the private sector combined. It is difficult to argue that such aid is either directly beneficial to the private sector or even directly employed within natural resources.

Lessons

In all three countries, the pattern of agricultural development has been influenced both by the colonial inheritance and by U.K. aid in the period immediately after independence. In this respect, Kenya is in a special category, particularly because its African farmers inherited a commercial and technical infrastructure from settler agriculture that the other countries lacked. There are, however, a number of *common* colonial agricultural legacies with differing degrees of longevity. All three countries inherited a system of public regulation of much of the marketed output, with a structure of price controls, movement restrictions, and some monopsony powers. The ways in which this system has been employed have varied from country to country, as the sections above have described, but most of the system has remained in place and been consolidated.

The United Kingdom also bequeathed to the three countries a structure of support for smallholder export crops that placed emphasis upon producer responsibility for the financing of services such as research and extension. This structure has survived well, but it is still the case that research efforts in crops such as tea, tobacco, and coffee are organized by industry-financed foundations, and the decline in cotton production can be partly attributed to the failure of the industry to finance its work. Furthermore, the most successful extension services in the region are still financed from cesses and charges levied through crop

authorities.

The impact of ODA on domestic agricultural policies in the 1970s has been much reduced and, as a matter of policy, aid allocations have been influenced by the priorities agreed upon by governments with the World Bank and other donors. The attachment to the World Bank was deliberate in the case of project aid in the late 1970s and early 1980s, and reflected confidence in the much larger World Bank professional input into agricultural planning. It also reflected ODA support for notions of cofinancing and donor coordination over nationally agreed strategies (such as NRDP in Malawi and ASAL in Kenya).

While ODA's independent influence on agricultural policy in the three countries has been relative unimportant, it is evident that domestic agricultural policy frequently has played a major role in determining the effectiveness of U.K. aid. In particular, several of the projects instigated by ODA have been constrained by lack of effective government support. In some cases this is where prices regulated by government have posed a disincentive to production (e.g., cotton in Tanzania) or where public marketing organizations have been allowed to trade inefficiently (e.g., seed in Malawi or livestock in Kenya). But the more widespread constraints have been the inability or unwillingness of governments to provide appropriate budgetary and staff resources to activities where ODA has committed aid.

There is little evidence from U.K. aid to agriculture in the three countries to suggest that either aid-tying or local costs provisions have seriously diminished aid-effectiveness or that commercial factors have seriously distorted aid allocations. There is some evidence that ODA's procedures for preparing and supervising agricultural projects, particularly in marginal environments, fit uncomfortably with the complexity of the task of assisting peasant farming, but the main difficulty appears to be not the procedures themselves but the numbers of staff available to ensure that they are promptly and effectively undertaken.

Program Aid

These limitations on the effectiveness of agricultural project aid have contributed to a shift into program aid in the 1980s, and in all three countries ODA has seen program aid as a mechanism for supporting the agricultural sector. Program aid has been used to relieve balance of payments and import constraints that have been perceived to adversely affect the agricultural sector. It also has been used as part of a coordinated effort with other donors to encourage changes in agricultural policies and institutions designed to create a more favorable environment for subsequent agricultural aid investment.

These two agricultural aspects to program aid—agricultural inputs aid and policy reform—do not invariably sit together. In the case of the 1984 Malawi Programme Grant, there were no specific agricultural targets, and finance went largely to manufacturing industry and services—which at the time of actual disbursement did not suffer any serious foreign exchange problems. But the Grant was part of ODA support for a World Bank-led program of adjustment measures in agricultural policy and institutions in a series of SALs. In Kenya, program aid provided under the term "Natural Resources Private Sector Project Aid" was directed at major stockists of U.K. farm machinery and suppliers operating in the commercial sector. This was less attached to SAL negotiations than in Malawi, and when difficulties arose for the World Bank from government reluctance to deregulate the domestic grain trade, there was no discontinuation of U.K. aid. In Tanzania, an altogether more robust approach was adopted—with both program aid and new project aid withheld pending IMF agreement, and despite a series of domestic agricultural reforms in the mid-1980s. On agreement with the IMF, program aid included a substantial agricultural inputs package.

Such agricultural inputs aid (however "fast-disbursing" and helpful to governments in the generation of counterpart funds) has not, in practice, always been of direct benefit to agriculture, as it has not proved possible to predict foreign exchange requirements to the sector itself. In both Kenya and Malawi, there was less demand than anticipated from agricultural inputs importers, who in effect had privileged access to foreign exchange, and who had no incentive to use the relatively cumbersome process of procurement under program aid.

The impact of program aid is evidently difficult to assess in terms of a particular donor in a specific sector such as agriculture. But the growing use of bilateral U.K. program aid raises the question of whether, as a form of aid, this represents the best use of available resources, given U.K. strengths and capabilities. A related question is whether the specific ODA priorities within *project* aid—the main alternative form to program aid—are those which represent the best use of U.K. resources available for agricultural development.

There have been four areas of substantial U.K. *project* aid investment—integrated rural development, agricultural research, agricultural technical services, and smallholder crop authorities—and it is on the evidence of these four areas of aid that a case has to be sustained for a program of more directly targeted U.K. support for agriculture.

Integrated Rural Development Projects

Over the late 1970s and early 1980s, a clear spending priority for ODA in African agriculture was a series of area-based IRDPs, often in marginal environments and invariably concentrating upon low technology, low income farming. That generation of IRD projects is now frequently criticized for having been overambitious and poorly prepared in terms of their basis in improved agricultural technology, and too expensive in terms of the future recurrent costs of extension and farm service infrastructure. This study has examined three ODA-assisted projects and concludes that the differences between them do not support the generalized view of overambitious design and poor preparation.

Above all the design and content of the three projects varies greatly. In the most successful of them, namely EMI, the ODA approach was a slow buildup of specific interventions largely under the supervision of TCOs. In Mtwara-Lindi, the ODA project had some capital components, but it was primarily a major regional planning exercise. And Phalombe, the largest of the three in expenditure terms, was primarily an agricultural services project involving the provision of credit, extension, physical infrastructure, and transport.

"Overambitious" and "poorly prepared" inadequately describe all the IRD projects. It is the case that Phalombe largely accepted an existing package of agricultural services—despite ODA reservations about the economic and technical assumptions on which it was based. However, in Mtwara-Lindi, ODA established a detailed series of resource studies and finally found few opportunities for economic investment in agriculture. And in EMI, ODA selected a small number of interventions for support within the district agricultural services.

The lessons of ODA's poverty-focused agricultural projects suggest that ODA is correct in changing its approach from its earlier multisector "rural development" approach. It is also evident that the particular technical difficulties of marginal and remote areas require a major research effort, and that ODA support has been most effective where specific technical services have been supported. In the three cases reviewed, ODA has not been successful in firmly establishing regional planning and implementation mechanisms, and it has found it administratively difficult to support a number of locally managed infrastructure projects and welfare services in remote rural areas. However, where ODA has concentrated upon specific technical interventions and worked to assist the line departments in the ministries involved in natural resources, its project work has been generally effective.

Agricultural Research

When the three countries became independent in the 1960s, their agricultural research services were still staffed mainly by British expatriates, and continued manpower and financial assistance was needed to strengthen and maintain their research capability. In response, the United Kingdom provided personnel to fill key scientific posts for the Agricultural Research Council and the Agricultural Research Services of the Ministry of Agriculture, Malawi and for the regional centers of EAAFRO and EAVRO. Budgetary support was also provided, although this was phased out from the 1970s onwards. The numbers of long-term research postings also declined as greater emphasis was placed upon specific research projects.

The general record of government research performance in the three countries suggests that the basis provided by the colonial period and subsequent postindependence budgetary aid has not been consolidated. Project aid has had only a limited impact; training has been deficient; and longer-term institutional development has not occurred. In several projects, the contribution of governments to local costs has been inadequate, and at the end of U.K. involvement, the level of funding and activity in the project's field of research has declined further.

Yet this chapter has recounted several studies of relatively successful U.K. research aid. These positive assessments include support for cotton and tobacco research in Malawi, for veterinary work in Kenya, and for cotton in Tanzania in the early 1970s. All of these cases illustrate the importance of long-term research aid, with a series of initiatives to assist institutional capacity to address problems. In contrast, other cases of research aid, such as maize in Kenya and Malawi, and potato in Kenya, have involved significant initial technical advances, but ultimately this aid has had less impact than it should have because of discontinuity and a limited range of support measures.

It is not surprising that the greatest impact has tended to be made by the longest supported research projects. The length of support provided by the Cotton Research Corporation (CRC)—more than 50 years in Malawi and nearly 40 years in Tanzania—was the main factor in the development of the cotton industries all three countries, and it has left a continuing mark on subsequent research. Long-term support also has been most effective where institutes have been well supported nationally—for example, the Tea Research Foundation and Tobacco Research Authority of Malawi, and the Coffee Research Foundation of Kenya.

The case of cotton research also illustrates a wider trend in donor research support. There has been a major input into food crop research by the CGIAR centers but a lack of similar international support for nonfood crops. This factor, together with recognized U.K. expertise, provides sound reasons for strengthened U.K. aid for research into the major export crops of Africa. Similarly, there appears to be scope for expanded support for forestry and fisheries research in the three countries, as this has been modest since independence (except in postharvest fishery technology) when set against the U.K.'s substantial experience, especially, for example, in tropical forestry research in support of plantation development.

Smallholder Crop Authorities

Much of the interest in CDC's contribution to African agriculture has been on the design and management of Smallholder Crop Authorities (SCAs). In practice, the SCAs vary considerably. In the case of the tea in Kenya and coffee in Malawi, the CDC approach has been to concentrate upon building processing plants and facilitating marketing as a means of encouraging smallholder production on existing farms. In the case of sugar in Malawi, a settlement scheme model of supervised production has been instigated. And, also in Malawi, the tobacco scheme involves both supervised settlement schemes and an attempt to stimulate smallholder production outside the scheme area.

The overall record of CDC investment in the smallholder production of crops such as sugar, tobacco, and coffee has shown that the level of factory throughput and the ability of smallholders to pay for services is frequently constrained by their low yields (compared to estate performance, for example) and by their readiness to switch labor and other inputs away from the export crop once returns show signs of deterioration or uncertainty.

The outgrower schemes (such as KTDA) have been more successful in increasing production than the settlement schemes, which are also normally more costly to establish and administer and thereby place heavy financial burdens on tenants within the scheme. In irrigated smallholder sugar in Malawi, for example, loan repayments have been poor, and it has proved difficult to retain tenants on the scheme. In the case of Kasungu Flue-cured Tobacco Authority, substantial annual subsidy payments have become a feature of an authority designed to be self-financing.

The requirement on CDC that its projects in the longer run be commercially viable and produce a financial return means that its opportunities to develop new smallholder schemes is restricted—even where capital aid is provided to cover development costs and where technical cooperation funds are used to cover some management costs. It is significant that the level of private sector investment in similar schemes is modest. BAT in Kenya and, more recently, East African Industries in collaboration with CDC on oilseeds, are among the exceptions. Nevertheless, CDC venture capital and management skills clearly have made a significant contribution to African smallholder production of a narrow range of export crops, and the agricultural staff of CDC remain an important resource in the U.K. aid program.

Agricultural Technical Services

The main successes of U.K. agricultural aid in the three countries are in the provision of expertise and training in agricultural technical services and associated farm inputs. This includes the supply of planting materials and breeding stock, animal health services, crop protection services, and soil conservation services and minor irrigation. Some of

these successes are attributable to the work of ODA's Overseas Development Natural Resources Institute (ODNRI), and the case of armyworm control in support of local research and extension services exemplifies the value of home-based scientific units. Similarly, the work on East Coast Fever in Kenya shows the importance of long-term support involving capital and technical assistance aid. There is also evidence of the effectiveness of ODA assistance in the development of seed industries. The availability of specialist skills under the aid program has had a major impact in Malawi (and to a lesser extent in Tanzania) in production, multiplication, testing, processing, and storage.

In EMI in Kenya, ODA support has led to an improvement in the capacity of the Departments of Agriculture, Livestock Development, and Forestry to undertake technical work of direct relevance to farmers. A condition for effective support in this case, and also in the case of Mtwara-Lindi, is that technical interventions be appropriate to the capabilities of existing field services. It is because this condition is lacking that it is difficult to envisage, at present, any similar institutional strengthening in the animal health and range management services in Isiolo district; this is also why it has proved difficult to support extension services in southern Tanzania.

Conclusion

The overall evidence of U.K. project aid indicates that domestic policies have diminished the effectiveness of directly targeted support for agriculture. Yet the current level of donor support for program aid, linked to policy reforms designed to assist agricultural output, provides the basis for a revival of more targeted mechanisms of support. Among the large number of donors currently operating in African agriculture, ODA appears to be particularly well placed to move its policies forward into investments in technical services and research. It is such investments that will constitute the most important foundation for major increases in farm production and incomes in the continent.

Although the United Kingdom's scientific manpower with experience in African conditions has been depleted since the 1960s, ODA is still able to respond to the challenge of strengthening agricultural services and developing productive investments in the sector. If there is one area above all where ODA could claim a "comparative advantage" among donors, it is in the range of technical services and research that it is able to provide. The record of performance in Kenya, Tanzania, and Malawi—and the continuing availability of specialist manpower—suggests that ODA has a particularly important role among donors in direct assistance to African agriculture.

Notes

1. *Development Cooperation 1986 Report*, Paris: OECD.
2. UK *Agricultural Aid*, Tables 2.2 and 2.3.
3. UK *Agricultural Aid*, Table 2.6.
4. *Project Identification: An Evaluation of ODA's Procedures and Practices*, ODA 1985 (EV 291).
5. UK *Agricultural Aid*, Table 3.1.
6. *Evaluation of CEC Projects: Malawi Smallholder Coffee Authority*, ODA 1985.
7. UK *Agricultural Aid*, Table 4.9.
8. *Evaluation of Phalombe* RDP, ODA 1986 (EV 387).
9. UK *Agricultural Aid*, Table 5.1.
10. *An Evaluation of the Maize Agronomy Research Project 1972-78*. ODA 1983 (EV 241).

Chapter 8

German Aid to Agriculture in Cameroon, Kenya, Malawi, Senegal, and Tanzania

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Note

This paper has been prepared as part of the study "Managing Agricultural Development in Africa" (MADIA). The views expressed herein are those of the authors and not necessarily those of the German Aid Administration, the World Bank, or other organizations affiliated with the MADIA study.

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Introduction

The purpose of this chapter is to analyze German aid to agriculture in the MADIA countries on the basis of data from 1962-1985/86. A draft of this study has been discussed with the Federal Ministry for Economic Cooperation in Bonn. It must, however, be emphasized that the views expressed in this study are those of the authors, and not necessarily those of the ministry or other units of the German aid administration. While German aid has, of course, a generally accepted conceptual framework, quite diverse perceptions and judgments of aid issues nevertheless exist even within the administration. This variety of opinions reflects the complex nature of the problem. If one considers African agriculture in relation to the continent's critical overall economic situation, its population growth rates, the food crisis, the desertification threat, as well as its long-standing and emerging political tensions, it becomes evident that no one knows a single "right way" for a better future—since neither Africans nor non-Africans disregard the historical experience and since there is no universally proven global policy prescription for agricultural development. Yet empirical evidence does indicate that success rates of agricultural projects and programs are higher in other world regions than in Africa. Thus it is important as a first step toward improving project design, to find out why Africa is such a problematic field of action. In view of growing demands for more donor coordination and cooperation in development aid, the MADIA study's comparison of the diverse experiences of donor-aided development in agriculture should prove very helpful.

To reduce their own biases and errors, the authors have consulted competent people inside and outside the administration. Furthermore, the dissenting or diverging views of others are quoted when authors had to accept the possibility that certain lines of their own thinking might be wrong. The authors express gratitude to those interviewed and to the ministry, which was tolerant enough to extend them full freedom in the preparation and writing of this study.

German Aid to Agriculture in the MADIA Countries 1962-86

Volume of Aid Flows

In all the MADIA study countries except Senegal and Nigeria, Germany is among the "top four" donors in terms of Official Development Assistance (ODA)[1]. During the period 1962-86, Germany disbursed DM 5,070 million in the six countries.

Table 1
Aid disbursements to the MADIA countries, 1962-1986 (in DM millions)

	Financial cooperation (Gross)	Technical cooperation	Food aid	Total
Senegal	264.1	166.0	50.2	480.3
Cameroon	372.8	357.3	0.4	730.5
Nigeria	271.2	334.0	1.7	606.9
Malawi	307.3	189.1	0.0	496.4
Kenya	604.7	582.7	26.1	1,213.4
Tanzania	664.6	831.9	46.0	1,542.5
Totals	2,484.7	2,461.0	124.4	5,070.0

The first question to be raised is how large this amount is in terms of German development aid. In 1986, German bilateral and multilateral development aid (ODA) amounted to DM 8,317 million. From 1950-86, the total amount of German assistance to particular countries came to DM 69.2 billion. Of this sum, Africa received DM 25.3 billion, or 36.5 percent. It should be noted that Asia's share was even larger: 39.5 percent. In recent years, however, the distribution has shifted in favor of Africa due to the continent's severe problems. Now 42 percent of all means for development cooperation are spent in Africa.

In Africa (northern Africa included) fifty-four countries and territories are beneficiaries of German aid. The six MADIA countries have received roughly one-fifth of all aid to Africa over the last quarter of a century, although they only represent one-ninth of all countries aided; hence the MADIA countries received an overproportional share of German aid to Africa.

As the aid figures to the West African countries and to Malawi are relatively similar, it must be asked why Kenya and Tanzania have been so important in German development aid. As a matter of fact, these two countries, of all African countries, receive the highest attention from the German public, although for different reasons. Kenya in the German view, is one of the rare exceptions (together with the Ivory Coast) of a successful development example in Africa following a free market and entrepreneurial economy. Moreover, Kenya is widely known in the Federal Republic of Germany because it has succeeded in attracting a large number of German tourists, following the development of its tourist potential. Tanzania, on the other hand, has impressed the German government for a long time by the outstanding leadership of President Nyerere, by its development rhetoric, and by the high expectations of its rural development policy. When in recent years it became clear that these expectations could not be met, German development aid to Tanzania was reduced.

Table 2
Distribution of German development aid to MADIA countries among the individual countries, 1962-86

Countries	Percentage
Senegal	9.5
Cameroon	14.4
Nigeria	12.0
Malawi	9.8
Kenya	23.9
Tanzania	30.4
	100.0

The amount of German aid to Kenya and Tanzania is less impressive if one takes population figures into account. The per capita aid figures show that Senegal and Cameroon received relatively more aid, although not much more than Kenya and Tanzania. Because per capita aid for the MADIA countries does not vary greatly (except in the case of Nigeria), this appears to be a fairly good indicator of what the countries can expect in aid.

Table 3
German per capita aid to the MADIA countries

Country	Population (1985) (thousands)	Aid disbursements 1962-86 (in DM millions)	Per capita Aid (DM)
Senegal	6,558	480	73.24
Cameroon	10,191	731	71.69
Nigeria	99,669	607	6.09
Malawi	7,044	496	70.47
Kenya	20,375	1,213	59.55
Tanzania	22,242	1,543	69.35

What is the significance of the agricultural sector in German aid as compared to other aid areas? A first observation is that while the DAC countries (those donor countries which are members of the OECD's Development Assistance Committee) spend 12.8 percent of their commitments for cooperation to all developing countries in the fields of agriculture, forestry, and fisheries, Germany's assistance for these sectors accounts for 13.1 percent of its aid in Africa. Tables 4 and 5 show that there are three leading sectors in German development aid to the MADIA countries: basic infrastructure (including transport); agriculture (including the regional and integrated projects); and education, training, and research. All other aid is spread over a wide range of sectors. This is a second lesson to be learned from these tables: German aid covers a broad range of activities. Third, it must be emphasized that aid to the rural sector is much larger than expressed in the figures for agriculture. Many of the other items include rural aid components; for example, rural literacy programs are included under education, and agricultural development banks are included under banking. Thus aid to the rural sector may be considered one focal point of German assistance to the MADIA countries.

Table 5
German development aid (technical and financial cooperation) (percentages)

Aid sectors	MADIA countries 1962-86	All third world countries 1986
Agriculture, Forestry, Fisheries	11.5	13.0
Multicomponent Projects (Integrated, Regional Projects)	3.4	6.5
Economy, Planning, Public Administration	3.2	5.2
Basic Infrastructure, Transport	34.7	27.6
Industries, Mining, Construction	5.3	7.4
Commerce, Banking, Tourism, Services	4.0	7.1
Education, Training, Research	16.6	26.0
Public Health	3.9	2.6
Social Infrastructure, Social Care	3.8	2.6
Food Aid	2.5	
Other Measures, incl. Commodity Aid	11.1	1.7
Total	100.0	100.0

To assess whether German aid to the MADIA countries has special characteristics or whether it conforms to the aid profile of all Third World countries, the percentage distribution of aid to the various aid sectors of the MADIA countries over the period 1962-86 is compared to the 1986 overall picture.

In 1986, the share of agriculture, forestry, and fisheries in aid worldwide was higher than that for the MADIA countries over a quarter of a century. This was particularly so in the category of multicomponent projects, the worldwide importance of which was almost double the quarter-century average for the MADIA countries. This development reflects German aid philosophy, according to which the agricultural and rural sector should be given the most attention, and an integrated approach should be followed. Another observation relates to the basic infrastructure and transport sector. Investment for infrastructure in both cases represents the single most important item of all aid categories, but it is

Table 4
German development aid (technical and financial cooperation) by MADIA countries and sectors, 1962-86 (in DM millions)

Sectors	Senegal	Cameroon	Nigeria	Malawi	Kenya	Tanzania	Total
Agriculture, Forestry, Fisheries	79	81	50	42	167	164	583
Multicomponent Projects (Integrated, Regional Projects)	3	7	4	94	34	29	171
Economic Planning, Public Administration	14	44	7	19	65	12	161
Basic Infrastructure including Transport	142	367	224	189	367	470	1759
Industries, Mining, Construction	45	25	1	-	78	123	272
Commerce, Banking, Tourism, Services	9	31	6	12	98	51	207
Education, Training, Research	47	100	145	17	194	339	842
Public Health	20	15	31	20	27	85	198
Social Infrastructure, Social Care	10	7	77	28	20	52	194
Food Aid	50	-	2	-	26	46	124
Other Measures, incl. Commodity Aid	61	54	61	76	138	172	562
Total	480	731	608	497	1,214	1,543	5,073

much larger in the MADIA countries (with more than a third of all aid disbursements) than worldwide. The importance of this sector for the MADIA countries underlines the desire to overcome the severe infrastructure constraints in Africa.

Aid disbursements to education, training, and research are in both cases larger than those to agriculture (if one excludes multicomponent projects). The worldwide figure for 1986 makes evident the outstanding importance given to this sector in German aid and shows that the African countries are lagging somewhat behind in that respect. In recent years, the level of German aid for research has increased, due to the realization that research and training are the most productive investments.

Finally, it can be said that there is substantial correspondence between the MADIA sector profile of aid and 1986 aid to the Third World as a whole. Thus it may be concluded that many of the generalizations about German aid to the MADIA countries also hold true for all Third World countries.

Table 6 shows that German aid to agriculture covers a wide spectrum of measures and includes almost all subsectors. Thus German aid to agriculture in the MADIA countries is once again characterized by its versatility. It is clear that agriculture in the narrow sense plays the dominant role, and that the forestry (including afforestation) and fisheries category is insignificant in the German aid pattern for the MADIA countries. Within general agricultural production, agricultural extension receives 20 percent, or the largest share of German aid to agriculture. This concentration on the instrument of agricultural extension is a consequence of the concept that smallholders should be the main target group of aid. The effectiveness of this approach may, however, be challenged, given the fact that almost no agricultural research is supported by German aid in the MADIA countries. But agricultural extension can only be productive if there are attractive innovation messages—a task that must be shouldered by research programs prior to extension.

Looking at the countries, it is once again Kenya and Tanzania, with 28 percent each, that receive the lion's share of aid to agriculture.

Of particular interest is the relevance of multicomponent (regional and integrated) projects in German aid. These projects, which amount to about 30 percent of the sum spent on agriculture, contain a major agricultural component. These integrated projects are unimportant in the three West African countries, but they play a major role in the East African cases. All German aid to Malawi is marked by this type of development approach.

A comparison of the volume of aid to agriculture disbursed between 1981 and 1985 to the corresponding figures for the 1973-80 period shows that the share of agriculture increased by 8 percent of the total flows including regional projects and agricultural credit banks. In terms of volume, aid to agriculture grew much faster than total disbursements per year or remained stable as in the case of Cameroon.

Aid to agriculture grew at a very fast rate in two of the countries: Malawi and Senegal. Two countries, Kenya and Tanzania, received more than twice as much per year in 1981-85 than they did in the 1973-80 period. In only one country, Cameroon, did average disbursements remain stable.

A final word may be said about the development of personnel cooperation. Development experts for projects are provided by the German Agency for Technical Cooperation (GTZ). The number of experts in the MADIA countries has been rather stable over the years, with an expansion in recent years. The widely assumed attrition of the knowledge base in tropical agriculture thus is not a characteristic of German development aid.

Table 6
Composition of German development aid for the agricultural sector in the MADIA countries, 1962-86 (in DM millions)

Agricultural sector	Senegal	Cameroon	Nigeria	Malawi	Kenya	Tanzania	Total	Percent
Agricultural Production	4.9	0.4	-	-	42.5	45.5	93.3	16.0
Irrigation	13.9	6.0	-	-	9.8	-	29.7	5.1
Plant and Harvest Protection	0.1	-	8.4	-	2.7	-	11.2	1.9
Plant Production	17.9	3.1	-	2.1	5.5	27.6	56.2	9.7
Fertilizer	0.9	-	6.4	5.1	2.7	1.8	16.9	2.9
Agricultural Tools and Machinery	0.9	0.2	10.4	4.5	1.0	1.1	18.1	3.1
Animal Production	7.1	1.7	10.9	10.1	2.7	0.1	32.6	5.9
Veterinarian Measures	0.9	17.7	9.5	-	4.3	16.6	49.0	8.4
Agricultural Services (Coop. etc.)	7.7	-	0.2	-	16.6	0.8	25.3	4.3
Agricultural Extension	0.2	19.7	2.9	-	44.0	52.0	118.8	20.4
Agricultural Research	0.9	-	-	-	0.2	-	1.1	0.2
Forestry, Afforestation	23.1	-	0.1	8.3	4.9	0.6	37.0	6.4
Fisheries	0.1	-	-	-	-	6.0	6.1	1.1
Home Economics, Nutrition	0.2	-	-	-	-	-	0.2	-
Agricultural Technology	-	26.0	-	-	2.3	1.3	29.6	5.1
Miscellaneous	-	5.9	0.6	11.6	27.5	10.5	56.1	9.5
Total	78.8	80.7	49.4	41.7	166.5	164.1	581.2	100.0
Multicomponent Projects (Regional, Integrated Projects)[a]	2.9	6.8	4.2	93.9	34.0	28.8	170.6	

[a] Multicomponent projects generally have a heavy agricultural component. For this reason, multicomponent projects should be mentioned in the context of agricultural development, but they cannot simply be classified as agricultural projects.

Table 7
GTZ-experts in MADIA countries

Country	Year 1970	1980	1988
Senegal	8	13	21
Cameroon	20	33	32
Nigeria	23	-	8
Malawi	23	6	26
Kenya	43	46	61
Tanzania	45	55	54
Total	162	153	202

Historical Background and Institutionalization of Aid

The beginnings of development aid efforts by the German Federal Republic reach back to 1952, when the first contribution was made to an expanded United Nations aid program. In the 1950s, aid activities were institutionally handled either by the Foreign Ministry (AA) or by the Ministry of Economic Affairs (BMWi). The formation of a German Federal Ministry for Economic Cooperation (BMZ) dates back to November 1961—to a decision made by a newly formed government coalition. Initially the ministry had only a coordinating function, but it was subsequently given full responsibility for implementing technical cooperation. In December 1972, the BMZ finally was made responsible for capital aid (financial cooperation), which previously had come under the Ministry of Economic Affairs. Though now politically fully responsible for German development aid, the ministry only bears an indirect responsibility for implementation. The departments in the ministry restrict themselves to basic policy decisions, program control, and evaluation—entrusting the detailed implementation to subordinate institutions. In the case of technical cooperation, the relevant institution since 1975 has been the *Deutsche Gesellschaft für Technische Zusammenarbeit*, GTZ (German Agency for Technical Cooperation), whose creation was, in turn, the result of a merger between a German federal agency for development aid and an internationally active institution dating back to the period between the two world wars.

To implement capital aid (financial cooperation), the administrative structure chosen was the *Kreditanstalt für Wiederaufbau* (KfW), formerly the Reconstruction Loan Cooperation, set up to administer the funds under the Marshall Plan.

Still another important event in the evolution of German development aid was the foundation of the European Economic Community. The signing of the Treaty of Rome resulted in the establishment of the European Development Fund (EDF)—whose role is the focus of another chapter in this volume.

German development policy is founded on a mix of philanthropic motives as well as political and economic interests. Germany is, however, committed to the principles elaborated by the United Nations. The first full-blown development policy concept elaborated by BMZ in 1971 and adopted by the cabinet states: "The German Federal Government is seeking in accordance with the UN strategy document to promote economic and social progress in developing countries within a system of international partnership as the objective of the Second Development Decade, in order to improve living conditions for the populations in these countries."

The integration into internationally agreed objectives was not seen as conflicting with the economic interests of the Federal Republic of Germany: "Economically, this will create the conditions for greater trade in commodities and services in the mutual interest. An effective development policy strengthens the international position of the Federal Republic of Germany. It improves the long term chances for securing peace."

For a long time, the Federal Republic sought to prevent recognition by developing countries of the other German state. Since the admission of both German states to the United Nations as full members, development aid has not been appropriate as a means for restraining recognition of the German Democratic Republic.

Over the years, a tendency emerged to concentrate aid where it was most needed and in vulnerable countries, mainly in Africa and Asia. As these countries generally are unimportant trade partners for the Federal Republic of Germany, it cannot be maintained that there is a very close link between economic interests and aid. A certain correction of the liberal aid policy was only made after the installation of the conservative-liberal government coalition in 1982; since then, German aid has had to take into account the employment effects of aid for the German Federal Republic, with the consequence that policies on aid-tying have become more restricted, especially by using the instrument of mixed financing.

As for the institutional structure of German development aid, it is important to underscore the role of private organizations, of volunteer groups, and, above all, of the Protestant and Catholic churches. Since the beginning of organized development efforts, relying on long-time established contacts, these societal groups run their own aid programs subsidized by governmental funds. Moreover, in recent years, public support for private organizations has even increased—as they enjoy the reputation of higher efficiency in program execution, better performance in small-scale projects, easier access to poverty groups, and more flexible work in politically troublesome areas. The bulk of commitments to the MADIA countries, however, result from financial and technical cooperation assistance, which therefore are described in some detail.

Financial cooperation. Financial cooperation or "capital aid," channeled to the recipient countries by the *Kreditanstalt für Wiederaufbau* (KfW), comprises project-bound loans, sector programs, maintenance and support supplies, contributions to structural adjustment loans such as those paid under the Special African Facility, and a fund for specific studies and experts (project preparation, implementation assistance). Financial cooperation accounted for only 13.5 percent of total disbursements in agriculture to the MADIA countries during the 1973-85 period. However, the picture changed considerably in the 1981-85 period as compared to the years before. Whereas financial cooperation disbursements represented only 5.6 percent of aid to agriculture in 1973-80, they accounted for 18.4 percent in 1981-85. This increase reflects the view of the BMZ that within financial cooperation, higher priority should be accorded to agriculture.

The foreign exchange and budget problems of recipient countries result in a growing importance of new forms of program aid (sector loans and maintenance support) in agriculture too (machinery and equipment, fertilizers),

creating interesting export opportunities with guaranteed exchange transfer for German firms in countries traditionally belonging to the British or French *chasse gardée*. Other cooperation instruments, foreign trade, and investment considerations such as mixed financing, are not of very great importance in the countries under analysis.

Financial cooperation conditions vary considerably among the MADIA countries: Malawi and Tanzania belong to the least developed country (LLDC) category, to which financial cooperation is given entirely in the form of grants. Cameroon is considered a "most seriously affected country" and therefore gets IDA soft loan conditions. Kenya and Senegal have to pay standard conditions (2 percent interest, 30 years, 10 years free). The projects financed by BMZ via KfW in agriculture are mainly investments in rural infrastructure (roads, irrigation, settlement, marketing, and processing) or aid refinanced rural credit schemes.

Technical cooperation. Technical cooperation is the most important instrument of German aid to Africa in the agricultural sector. It is by definition "expert-intensive." However, within technical cooperation, supplies in kind and financial contributions have grown to almost 50 percent of disbursements.

Technical cooperation projects are even more difficult to categorize than those of financial cooperation. There are single-message projects carried out in a few months by highly specialized short-term experts, and comprehensive Rural Development Programs in which up to DM 100 million were spent during 15 years or more; there are advisers fully integrated into the national civil service, and others working in almost independent project units. As far as the subsectoral allocation is concerned, most technical cooperation projects aim at improving small-scale farming via the promotion of food production.

In summary, technical cooperation comprises the promotion of students, experts, and volunteers; the supply of equipment and material for research; training and demonstration; technical aid; and extension agencies.

In recent years, the two aid forms resemble each other in terms of substance and methodology. Financial cooperation is developing a technical cooperation component and the other way round; some technical funds can be spent as a kind of financial cooperation element within technical cooperation. In the MADIA countries, there are also more and more projects in which the two work closely together.

Food security. Food aid and food security programs (see Table 1) had been started in the three countries belonging to the drought-menaced Sudano Sahelian region (Kenya, Senegal, Tanzania) due to the drought of the 1970s and the mid-1980s. Food security programs originated as a sort of *ad hoc* program (construction of storehouses, security reserves)—which is why this aid form was not included in the technical cooperation category. Projects either supply food aid, the counterpart funds of which are often used to refinance "normal" projects such as Rural Development Programs and the like, or contributions to food security programs, including stockholding, grain marketing, and the maintenance of security reserves (e.g., in Senegal). This study does not include *multilateral aid* to agriculture. However, it should be mentioned that German contributions to multilateral institutions and programs, for example in the field of international agricultural research (CGIAR System), are considerable.

The Conceptual Framework of German Agricultural Promotion

The broad range of aid activities in the agricultural sector makes it difficult to distill a clear-cut set of principles and concepts underlying this type of aid. Aid to agriculture must be seen in the framework of the general development policy, and it may therefore be adequate to summarize the guidelines of this policy before dealing with the specifics of the agricultural domain.

Orientations of German development policy. The most general goal of German development policy is to assure basic life needs of the people in the Third World and to make them capable of helping themselves. German aid wants to contribute to the construction of a viable economy maintaining societal pluralism as a prerequisite for a self-reliant development. Developing countries that favor democratic structures and respect human rights are the preferred partners. To alleviate poverty, the development process should be founded on a broad economic, social, and political base. This broad base can be achieved by concentrating on the populations of rural areas and the urban informal sector.

To materialize the principle of self-help, favorable framework conditions are necessary. Besides freedom of private initiatives, it is important that governmental institutions provide their services to the poorer segments of the society. Experience has shown that the spread of the market economy in developing countries works best when people can develop according to their capabilities. Societal structures in which independent livelihood can be made in handicraft, industry, commerce, and services, and in which small-scale and intermediate businesses emerge particularly contributes to development. Public aid cannot replace the dynamics of the private sector, which also has to provide capital, entrepreneurial and technological knowledge. In addition to improving the coordination of aid, the German government follows a policy dialogue with the developing countries to achieve economic and social reforms, to assure nutrition, and to make administrations more efficient.

Between 1984 and 1986, the policy dialogue with the African countries focused on the question of how once again to achieve economic growth. It had become evident that the increasing food crisis, induced partly by climatic conditions, had mainly been caused by distorted prices in agricultural markets and by the neglect of the rural regions in development efforts. African governments therefore were encouraged to liberalize prices on agricultural commodities; other measures concerned the retreat of the state's activities from industrial enterprises, a cutback of subsidies, and the implementation of realistic exchange rates. Because of frequent project failures, German aid is particularly concerned that sociocultural aspects are respected in project areas and that target groups legitimize project work. Especially in rural Africa, the important role of women in agriculture must be acknowledged, and income-generating development opportunities should be created for women (7th Development Policy Report, 1988).

The Evolution of the German concept of agricultural promotion. The German concept of agricultural promotion in African countries has evolved slowly over time, and has seen drastic changes. Like other Western donor countries, Germany at first shared the assumption that development is largely synonymous with industrialization—and that the role of agriculture is to facilitate this industrialization. While

it was recognized that agricultural production should increase and provide a cash income for farmers, it was thought that in Africa, mostly cash crop production should be fostered—since the Federal Republic of Germany needed imports of tropical agricultural products (coffee, tea, citrus fruits, sisal, tropical woods, and bananas). Germany, in turn, was seen to be ideally equipped to supply industrial products. It was only later that problems of rural poverty and famine became prominent in policy thinking. Even in 1971 there was widespread optimism that nutritional problems could be solved by applying the "green revolution" techniques. The emerging problems of inequality of income distribution and the lack of purchasing power among the poorer segments of the population in rural areas were seen primarily as questions of agricultural reforms.

There has been an ongoing debate over what lessons can be learned from German agriculture that can be transferred to project work in Africa. Agriculture in the Federal Republic of Germany is characterized by production by small family farms. Hence, the institutional setup for this type of farming was thought to contain elements (for example, cooperatives) that could be transferred to a culturally different environment. This, for instance, is also the reason why German aid to African countries relies so much on the extension approach.

The problems of the nutrition gap were clearly presented in the development policy report of 1973, which stated that agricultural production in developing countries lagged behind the worldwide goal of 4 percent set for the Second Development Decade, and, moreover, was barely keeping pace with population growth. At this time the German Federal government supported measures that help to increase the diversification of agricultural production, but it also assisted measures to improve the structure of agriculture and contribute to creating additional employment. Special emphasis has been put on agricultural research and cooperation with the World Bank since 1972 through the World Bank Consultative Group on International Agricultural Research (CGIAR).

Modern thinking on agricultural promotion dates back to the middle of the 1970s, which were characterized by the dual concerns that development aid should contribute to creating and preserving employment and that food production is the main function of agriculture.

The twenty-five development policy points issued by the cabinet in June 1975 were a landmark in German development thinking. Here the growing divergencies that had emerged within and between developing countries were recognized, and priority was given to cooperation with the poorest developing countries, mainly those in Africa. Point 16 stated: "...in view of the precarious situation in regard to food supplies in developing countries, the Government of the Federal Republic of Germany will as far as possible concentrate its resources available for cooperation on rural development in partner countries." The development policy reports of 1975, 1977, and 1980 clearly show how the problem of rural poverty has become a priority. Global approaches, including multicomponent projects to promote rural development rather than just agricultural production are becoming increasingly important. The idea of basic needs fulfillment is described as productivity-oriented and is followed in project work, in addition to the target group approach by which aid is concentrated on smallholders.

In July 1980, the German Federal government presented its development policy guidelines, taking into account the recommendations of the the Brandt Commission—the Independent Commission on International Development Issues. Here again, combatting absolute poverty was designated as the top priority in German development policy. Although the integration of the developing countries into the world economy was advocated, it was recognized that developing countries need to achieve self-sufficiency in food production. In a resolution in March 1982, all parties in the German Bundestag supported this approach. The policy statements after the coalition realignment in October 1982 show continuity in the area of rural development policy. The main stated goal of rural development is achieving a large measure of self-sufficiency in food supplies. The small farmer has top priority in bilateral cooperation to increase agricultural production. This emphasis is, however, subject to the qualification that it must not lead to a situation where "the rest of the rural population and other complementary areas important for the development of agriculture are neglected" (6th Development Policy Report, 1985). This qualification expresses a growing concern with the poorest of the poor (the landless laborers in rural areas)—a social category that tended to be neglected in conventional project work, but that becomes more and more important even in Africa (among the MADIA countries, Kenya, for instance, has a land pressure problem).

In summary, the sector papers of the BMZ on rural development enumerate the main features of German aid to agriculture as follows:

—A target group orientation;
—The priority of the rural poor and the smallholders;
—Emphasis on food production;
—The importance of environmental and gender aspects;
—A farm level approach;
—The explicit consideration of equity concerns.

Although these principles are laid down in the guidelines for project work, still other considerations nevertheless enter the picture when it comes to decisionmaking on project identification (see next section). The strategy papers, with their basic principles, illustrate the picture instead of explaining it by making a clear and binding declaration of a consistent policy rationale. The papers were put together under the strain of often conflicting positions and views within the development community, and their main function was to bring those views into shape and, second, to contribute the particular know-how of the sector desk in order to improve continuously the efficiency of the aid program.

The Determinants of Policy Choices

The final decision to cofinance a particular project in an African country results from a continuous and complex process of dialogue between Germany and the respective recipient country. Basic policy choices with regard to the regional and sectoral allocation of aid are made at the minister's level of BMZ on the basis of the latter's budget as approved by Parliament—of course in close cooperation with the Ministry of Economic Affairs, the Foreign Office, and other competent units, such as the Economic Cooperation Committee and the Budget Committee of the Bundestag. Several considerations may influence the decision: foreign policy criteria; the importance of the country in terms of Germany's foreign trade interests; the need to coordinate German aid with the European Community (EC),

the World Bank, and bilateral donors; and internal constituency concerns.

The most important criterion, however, is the volume of aid that the country under review has received in previous years. The "don't change too much, for this may cause trouble" rule seems to be the leading one at that level—and for good reasons. The majority of commitments made during bilateral negotiations are usually accorded for replenishment and amplification of existing projects. A sharp reduction of overall commitments would cause problems for current programs. A sharp increase, on the other hand, could prove difficult to absorb for the receiving country. Decisions about the division of a global commitment for a specific country into projects are made during bilateral negotiations.

The negotiations are preceded by consultations with the recipient country on the basis of the previous agreement among the different desks within BMZ and between the latter and other competent ministries (such as the Foreign Office and the implementing agencies, i.e., KfW and GTZ). The project identification procedure itself starts much earlier, however—long before the bilateral consultations. German aid is permanently present in African countries. There are experts working in staff units of ministries or the president's office. In some recipient countries, officials from the BMZ are permanently attached to the German embassy. If necessary, the administration may send out a particular project identification mission or ask an evaluation team to include proposals for new activities in connection with the project under review in their reports. This approach guarantees a permanent dialogue with the recipient country at all levels of decisionmaking and acts as a filter, so that projects that would not have a chance of being seriously considered do not appear on the official shopping list later on.

Projects in agriculture are usually long-term affairs. They need careful preparation during and even before the identification and planning stages if difficult-to-correct mistakes are to be avoided. The competition among donors for feasible and "bankable" projects requires their early and permanent presence, and the limited capability of recipient countries to work out project proposals drives the system in the same direction.

The donors' budgets compete for projects and counterpart resources—not the other way around. This in some cases leads to an involuntary softening of efficiency criteria, to an unjustified precedence of the disbursement ease argument and, again involuntarily, to overoptimistic assumptions about development potential and capabilities on both the recipient and the donor side.

There are two conclusions to be drawn. First, in contrast to the 1960s and 1970s, when projects were submitted by the recipient country to Germany, which *reacted* to the respective proposals, finding projects is now an interactive procedure, with both partners cooperating closely from the very beginning in order to work out more or less agreed proposals for the negotiations. The selection criteria laid down in the general and sectoral strategy papers are guidelines to keep this interactive procedure on course, but they are not used as an "either/or checklist" that decides on the acceptance or refusal of a recipient country's application.

Second, the complex project identification procedures described above make it difficult to attribute particular projects to clear-cut policy choices. The decisionmaking process has quite a number of determinants. However, over time, a number of standardized procedures have been developed—largely to help speed up the identification and negotiation process. In agriculture, nine key programs have emerged that can be offered as individual programs or as packages. These are:

(1) *Promotion of institutions*: research promotion, extension services, training of extension officers and government advisers;
(2) *Rural development*: rural regional development, self-help organizations, promotion of agricultural marketing, agricultural credit, data collection;
(3) *Plant production*: production and distribution of high quality tested seed;
(4) *Plant protection*: protection services, pesticides, residues and formulation control, vertebrate pest control;
(5) *Forestry and forest industries*: forest production and conservation, forest administration, training advisory service and planning, forest industries and timber processing;
(6) *Lifestock production and animal health*: cattle breeding and farming, tropical forage procurement and pasture management, feedstuff testing and control, veterinary services, veterinary laboratories and animal health services, trypanosomiasis control,
(7) *Marine and freshwater fisheries*: offshore fisheries, freshwater fisheries;
(8) *Agricultural mechanization, soil conservation, and irrigation*: agricultural engineering, development centers, training and extension work in agricultural engineering, irrigated farming; and
(9) *Processing and manufacturing, agribusiness*: food technology, postharvest and storage protection.

Country Profiles and Project Examples

This section presents "country profiles" of German aid. For each country, one project example is given; while the examples represent different types of projects, the main criterion for their selection is their proven effect on target populations, regions, or the national level.

Cameroon

Country profile. In Cameroon, Germany ranks fourth as a donor (after France, the World Bank, and the EC) in terms of ODA commitments. The main focus of German aid are infrastructure (railways, roads, harbors), rural development, and small-scale industry. Because of its oil reserves, Cameroon alone among the MADIA countries has no problems financing local currency and running costs out of its own budget.

Coordination with other donors is a particular feature of German aid in Cameroon. There are projects cofinanced in cooperation with the World Bank, the EC, and IFAD. However, the need to coordinate several donors within single projects have caused severe pipeline problems. This is the main reason for a rather slow growth of aid disbursements in Cameroon as compared to the other countries.

The most important projects are within financial cooperation: a rural credit scheme for cattle production in the framework of the Plan Viande cofinanced by the World Bank (DM 6.5 million); a credit line for agricultural development in the Northwest province in cooperation with the EC and IFAD (DM 45 million); and a contribution to the construction of cereal storehouses (DM 12.1 million). In technical cooperation, there are seven major projects, including: the agricultural utilization of the Benue Valley—mainly studies and a masterplan (DM 9.2 million); the extension of appropriate cultivation systems by drought animal utilization (DM 5.2 million); advisors to FONADER to transform this authority into a rural development bank (DM 14.6 million); training of young veterinarians (DM 3.6 million). Three of the seven technical cooperation projects have been handed over to Cameroon in recent years: the Agricultural Training and Settlement Center in the Wum region (DM 18.5 million); the Agricultural Mechanization Center, or CENEEMA (DM 22.1 million); and control of the tsetse fly in the Adamoua Highlands (DM 8.9 million).

Project example. As it has already been handed over to Cameroon, the Agricultural Training and Settlement Center in the Wum region may serve as a project example that permits one to draw some conclusions.

The center was founded in 1966 and after an implementation and a transition period, handed over in 1980. The target of WADA was an increase in agricultural income through the growth of agricultural production, intensification of the extension service, improvement of housing conditions, and support of local milk processing. To increase income, it appeared to be necessary to improve the agricultural cultivation methods, to introduce new crops, to switch to permanent crop production, to promote rural cooperatives, and to develop the production of seed.

During the implementation phase, a big central farm was established that was designed to gain substantial financial surpluses by modern large-scale production. These surpluses were to be used for financing a training and settlement center for young people. The initial objectives turned out to be far too ambitious, so that later the central farm was reduced, and the settlement program was slowed down in favor of a concentration on the improvement of existing farms. As a consequence, the Block Extension Service was introduced, a group farming program was started, and the use of animal traction was initiated.

The results achieved with this project were mixed. During the first phase of the project most results were not encouraging because of overemployment problems in the project, lower agricultural yields than expected, losses caused in most activities, and doubts as to whether the project really would serve to support the economic development of the region.

After a reorientation phase, successes were achieved on a small scale. The concept of group farming was accepted, and the introduction of rice and maize cultivation proved to be successful; the spread of animal traction gained momentum as well. However, other problems persisted. The participation in the Block Extension Program decreased because the participating men were rather unaccustomed to hard farm work. The yield of permanent crops like coffee and plantains was disappointing because of poor location and diseases. In the settlement program, severe problems arose with the repayment of credits.

The management of the central farm was marked by the fact that the capacity was used at less than 40 percent; there was no exact cost-revenue calculation, and the storekeeping was far from satisfactory.

Moreover, animal traction proved difficult to introduce because of the necessary investment on the farm level and the inexperience in raising cattle. Oxen were only used for ploughing and harrowing—that is, for only a few months a year. In the long run, positive results favored oxen techniques, as investment and maintentance costs for tractors grew faster than comparable costs for oxen; raising cattle will contribute to the development of a more modern type of mixed farming, so that crop cultivation with oxen will be done in areas that until now were reserved for women's shift cultivation.

In conclusion, project experience has shown that, despite the large subsidies made available for this purpose, many farmers are not convinced that modern crop farming on the basis of tractor services is profitable and that animal traction is the more adequate solution. The initially used package approach proved to be too ambitious for local farmers. Thus it was learned that a project should be prepared with an orientation phase in order to recognize the handicaps in time. Finally it can be stated that German experts have been replaced by Cameroonian senior officers in time, and replacement was completed without serious disturbances in project activities. The smooth handing over indicated that there were capable and engaged Cameroonian staff members who could continue the project.

Kenya

Country profile. In Kenya, Germany ranks third (after the United States and the United Kingdom) among bilateral donors. The total commitments in financial cooperation did not grow after 1982/83, which raised some eyebrows in the Kenyan administration.

Agriculture is the priority sector within both financial and technical cooperation. There are four important agricultural projects in financial cooperation: the irrigation scheme in Muka Mukaa and Mitunga (DM 26.5 million)—a project to be extended to the Nkondi region; rice production in the Mwea-Tebere region, which aims at full self-sufficiency of the country (DM 12.9 million); the refinancing of the Agriculture Finance Corporation's credit scheme to improve smallholder farming in the Kisii and Kericho districts (DM 6.4 million); and the promotion of fruit and vegetable production and marketing (DM 11.8 million).

Furthermore, Germany contributes DM 25 million to the Sectoral Adjustment Program under the African Facility. In technical cooperation, the project list is rather long: the most important and interesting project is the German Agricultural Team or GAT (DM 81 million). There are two additional integrated settlement schemes—one in the Lamu and Kilifi district (DM 12.4 million) and another in the Coastal region (DM 13 million). Another rather large program is the cooperation of Giessen and Nairobi universities in the field of veterinarian research and training (DM 8.1 million). Within the food security category, Germany also cofinances the Food for Work/Cash for Work Project in the Samburu district (DM 5.2 million).

Project example. The German Agricultural Team (GAT) has a special position in German technical cooperation by virtue of its long history. A German group of advisers has been working in Kenya since 1963, either directly with the Kenyan Ministry of Agriculture and Livestock Development or under it. At the end of 1984, there were 21 technical cooperation experts working in line functions, advising their

Kenyan counterparts and preparing projects, including those to be financed by German aid. Thus the GAT is not a project in the narrower sense of the term, but rather a program. It even had some influence on macroeconomic decisions because a German staff member was able, as a member of the Kenyan Price Commission, to exert influence on setting adequate producer prices.

In an evaluation done in 1985, this project was credited with significant effects on food production in Kenya. The project has concentrated primarily on small farms producing for the market and less on subsistence farmers. There was no explicit promotion of agricultural exports.

Besides the favorable effects on central activities in planning and policy formulation, the wide range of the project becomes evident when regarding its subdivisions.

The farm management subproject is credited with success in collecting and processing primary statistics and developing practical models for farm management.

Staff of the horticulture project dealt with marketing issues, and expedited the construction of the wholesale vegetable market in Mombasa.

The small irrigation subproject is currently implemented in the East province by two projects supported by technical cooperation.

The subproject for establishing a national gene bank is praised as a contribution toward creating fundamental prerequisites for effective plant breeding.

The Transmara preextension project has a special political function, since rangeland utilization will play an increasing role in Kenya—a country with one of the highest population growth rates in the world.

When reflecting on factors that positively influence the success of this project, it must be pointed out that in contrast to normal practice elsewhere, the experts of the GAT were generally employed on the project for long periods. Thus they are not only extremely familiar with the situation and policy environment, but also can better exert influence.

A recent evaluation highlighted that the length of stay may have become excessive, reducing the adaptability and technical objectivity of the experts in their work. Several other important questions were raised. First of all the wide range of activities, while demonstrating the flexibility of GAT, also contributed to the danger of marginalization. Another point concerned the variety of functions assumed by the team leader and whether he has enough time at his disposal for more functions, such as the coordination of project preparation and implementation, and especially project follow up. Most importantly, the critique concerned the training function of the project, stating that the implementation of a wide number of concrete tasks diminished the priority given to training of Kenyans.

A problem area—not only for German cooperation—will be the question of the political consequences of the recently introduced Kenyan government policy of replacing foreign experts in project cooperation with Kenyan administrators. The existence of the German Agricultural Team as well as that of a similar team from Harvard University could be placed at issue.

Malawi

Country profile. Germany ranks third (after the World Bank and the United Kingdom) as a donor in Malawi. The country is sometimes regarded as a model case for German aid in Africa. The delegation of responsibilities to German sponsored projects within the Malawian administration (Rural Growth Centers, National Rural Development Program) shows the exceptionally far-reaching integration of German aid into Malawian development policies. In financial cooperation, German aid focuses on infrastructure (road construction and maintenance). In technical cooperation, priority has been given to agriculture and rural development from the very beginning of Malawian-German cooperation after independence.

After the delivery of the Salima Lakeshore Project (DM 30 million) to the Malawian government, only three German-assisted agricultural projects remained in Malawi. Within financial cooperation, German contributions for rural infrastructure amounted to DM 11.5 million. In technical cooperation, there is the Rural Development Program in Liwonde, where Germany assists the management unit of the Liwonde ADD (DM 24.6 million), and the nationwide Livestock Development Project (DM 13.4 million).

Project example. The Rural Development Shire East Liwonde Agricultural Development Division (LWADD) management unit serves as a project example to be discussed in some detail. This is a complex project with different activities financed by German technical and financial aid and by contributions of the African Development Bank. In view of its integration into the National Rural Development Program (NRDP), its counterpart organization is the Ministry of Agriculture; the project is one of the eight Agricultural Development Division (ADDs) by which the Malawian government is implementing its NRDP.

The objectives of the project foresee the establishment and operation of a management unit that will contribute to the improvement of the living conditions of smallholder farmers, with special attention to women and young people, by increasing production and intensifying agriculture, by improving marketing facilities, by promoting education, health conditions, and the supply of potable water in rural areas; and by educating local experts.

The project supports the implementation of the NRDP by increasing cash crop and food crop production of smallholders, by providing inputs and services to the local population, and by preserving the national resources (soil conservation, protection of key watershed areas, and maintenance of forests).

A concept of decentralization of rural administration is followed within the LWADD.

Despite its multisectoral approach, the project considers itself more a rural development program than a regional development project in the strict sense of this term.

The focal point of the German assistance is the support of the Liwonde ADD management unit, and the establishment of a functional management system for rural services in the Liwonde ADD can be considered as the primary project result. Second, the extension service has improved, and the number of farmer participants and users of the input factor package program is quite satisfactory. Advice for individuals was stopped in favor of counseling groups of farmers. Third, an acceptable repayment rate of credit was achieved by having group members exert pressure on single borrowers.

Fourth, the construction of a road from Liwonde to Nsaname had positive effects shown by the increase in users.

Finally, basic needs could be satisfied by supplying potable water and health services.

Although the external activities mainly of the extension service started only in 1982/83 and the full impact of the

project therefore cannot be fully assessed, a number of risks exist that should get special attention after the 1987 project period:

Due to the supply of public services, farmers' expectations have risen; they expect more public support in favor of self-help activities.

Support for farmers at present mainly means for farmers of middle and large farms—so that the disparity between the lower third of the farmer stratum and the larger two-thirds will grow; a formerly homogenous target group will be divided into different strata.

Finally, the project environment will see a steady growth of estate ownership detrimental to the development of smallholder cultivation. Consequently, the target group in the project zone tends to become a minority.

In judging the project results, cost effectiveness can be considered satisfactory, since costs for the credit program are recovered by high repayment rates and the effects of the extension service are considered to be adequate. However, there is the problem of how to cover the high recurrent costs of the project. German aid has agreed to take over the recurrent costs of the administration of the project; in the long run, however, these costs cannot be financed by the Malawian government, so that in the future the project must give priority to cost reduction. This represents a general problem of aid, as many African governments not only have problems continuing a project after the handing over, but also are unable to provide adequate counterpart funds to cover recurrent costs during the aided period of a project. In the foreseeable future, the development and maintenance of the LWADD only will be possible through the support of donor organizations. There is little chance of the counterparts taking over responsibility for the activities.

On the other hand, the significance of the project is self-evident. Since 1983, 34 Malawian staff have been trained. A last gap within the system of a regional administration of agriculture was closed. Compared with other administration units on the ADD level the Liwonde MU is very well equipped, well organized, and—in the field of planning and evaluation—a most competent organization.

Senegal

Country profile. In Senegal, Germany ranks fifth as a donor (after France, the United States, the EC, and the World Bank). While physical infrastructure (water supply and transport) is the sectoral priority of Germany's financial assistance, agriculture is the priority sector of its technical assistance. Three projects in agriculture do, however, receive financial assistance: the Nianga Project in Senegal's Fleuve region (small-scale irrigation, substituting pumping to individual holdings for "culture de decrue"). This German project (DM 21.4 million) is part of a project package in the Podor Department financed by the World Bank and the EC. German financial assistance is also extended to an irrigation project in the Casamance region (DM 3.5 million), and Germany contributes to a government fund for financing small self-help projects (DM 4 million). Within technical cooperation, Germany is cofinancing a large afforestation project in northern Senegal (DM 24.9 million) that is trying to contain further desertification in the catchment areas of wells brought down by the French in the 1950s. Other important projects are the Maize Seed Production project (DM 6.5 million), which is closely linked to the financial cooperation irrigation project in the same area; a project to improve the production of cashew nuts (DM 5.0 million); and a Food Security Programme (about DM 15 million) that has financed storehouses for local cereals (with a capacity of 84,000 tons) and is now refinancing a market intervention scheme for local grains (millet).

Project example. The Maize Seed Production project is attempting to provide Senegal's rural population, as well as its urban population—which is accustomed to imported rice—locally produced alternatives in the form of "maize rice."

The objective of the maize seed propagation project is ambitious. Based on the experience that the government executing agencies have largely operated inefficiently—the dissolution of ONCAD and the formulation of the New Agricultural Policy confirm the recognition of this fact by the Senegalese government itself—a largely "German project" was set up, cooperating directly with the target group of small farmers. The project itself assured the role of a credit agency, and achieved repayment ratios of up to 95 percent until 1986. The project purchased approximately 500 tons of maize seed from the farmers in 1986 and used maize that was unsuitable for seed to produce maize rice for sale. Since the beginning of the project, maize production has rise. significantly in Senegal, but it is currently hindered by the absence of an effective supply system. A *de facto* line of responsibility stretches from the German project to the Senegalese farmers. Structural solutions must be found. So far, no definitive agreements have been reached between the German and the Senegalese partners. In times of crisis in Africa it must be asked whether this type of project must not be replicated more frequently—at least for a certain period of time. If the project is to succeed in increasing production, a more direct line of responsibility between the donor institution and agricultural producers must be allowed—even though this formula is adverse to conventional aid philosophy. Of course there is a danger that aid agencies following such an approach will be called interventionist. But in a study on this project, the interesting question was raised: "Is it conceivable that the donor might assume responsibility in areas of strategic agricultural importance until the producers themselves are in a position to organize themselves and possibly receive financial assistance directly without the intervention of government agencies?"

For the sake of completeness, it should be noted that assistance to the two great dam projects, DIAMA and MANANTALI, will have great importance for agricultural production in the Senegal Valley in the medium term—although there is not a very clear picture of their utilization to date. Financing and implementation problems in dam construction have been in the foreground so far, and the settlement programs need an adequate solution. The two countries mainly involved, Mauritania and Senegal, are considering using the water for intensive irrigated agriculture, particularly for rice, but detailed planning is not very far advanced. In the first phase of utilization of the MANANTALI dam, a conflict of interest emerged: The dam could be used to produce an artificial flood to revive the traditional flood in agriculture. This use could compete with the use of MANANTALI water potential to generate electricity all year round. In the medium to long term, this conflict would disappear, because irrigated agriculture using pumps to obtain two crops a year would also require a largely continuous release of water from the dam.

Tanzania

Country profile. Until 1984, Tanzania was one of the most important recipients of German aid in Africa. Between 1973 and 1985, the country received almost DM 1,100 million in ODA. In addition, some DM 500 million were spent for programs carried out by nongovernmental organizations (NGOs). In 1984, commitments were heavily cut in order to support the recommendations of the IMF and the World Bank to the Tanzanian government to reform the country's economic policies.

There are no German financial assistance commitments for Tanzanian agriculture. Besides TIRDEP (see below), there are three other German technical cooperation projects in Tanzania: the Coconut Development program (DM 23.0 million), the Ministry of Agriculture's Training Institute at Nyegezi (DM 17.7 million), and a Food Security Programme in the Rukwa region (DM 4.1 million).

Project example. In technical cooperation, an outstanding regional project is the Tanga Integrated Rural Development Programme (TIRDEP). It is not only one of the biggest projects under German technical cooperation (DM 100 million), but also one that is regarded as a model for regional development projects by other donors. After its start in 1971, a comprehensive regional development plan was worked out for the Tanga region. After listing in detail the available national resources and reviewing and analyzing all economic and social sectors, the plan presented general ideas for a development strategy from which 45 project proposals were derived.

When problems arose in attempting to coordinate individual projects, a BMZ evaluation report stated that individual projects are coordinated and formally integrated into the administration without meeting the standards of an integrated program in regional terms. Criticism of this project went so far as to say that, despite its name, TIRDEP is not actually an integrated project, but rather a loose bundle of individual measures in a single region. GTZ, as the executing agency, considers this critique to be too dogmatic; according to the GTZ view loose coordination—combined with a high degree of autonomy on the part of individual projects—was what made it possible to work directly with the farmers, obviating bureaucratic inertia and deficiencies. Thus the project attempted to assist farmers with their concrete problems, centered around the labor bottleneck, and tried not to become caught up in the Ujamaa efforts of the government. Problems arose, especially when it came to mobilizing unpaid labor for self-help projects (for which Germany provided materials)—so that in some instances hired labor had to be used to complete unfinished self-help projects.

The main components of TIRDEP can be described as follows:

- Village development programs with a relatively broad self-help component;
- Agricultural planning and extension work;
- An agroforestry project and erosion monitoring;
- A small-scale irrigation project;
- Improvements in the regional veterinary service;
- A water supply program; and
- An education program.

In conclusion, although TIRDEP cannot be described as having an overall concept with clear objectives, it has improved the living conditions of the rural population and the cumulative effects of the individual projects were positive.

Performance, Impact, and Lessons

Problems in Measuring Aid Effectiveness

Judging the performance of an aid program means measuring its effects against criteria that reflect the objectives and targets pursued both by donor and recipient countries. Evaluators must assess how the inputs—programs, projects, and activities—may contribute to goal achievement. In principle, judging aid performance presupposes an understanding of agricultural development, a clear concept of advancing development by aid inputs and an ability to separate the effects of projects from what Uma Lele has called "numerous and immensely variable factors." Deficiencies in knowledge about complex socioeconomic systems make it difficult not only to design complex programs, but also to judge their performance. Thus the following section should be read with caution. It should be noted that the sample is rather small, and that the reports refer almost exclusively to projects of technical cooperation.

Financial cooperation which now accounts for more than 20 percent of Germany's aid disbursements seems to have a more autonomous status, so that in the evaluation reports of the BMZ there are few clues as to the problems in financial cooperation projects, e.g., dam construction or the cofinancing of rural development banks. Furthermore, an assessment of the evaluation reports clearly shows a very strong bias on the part of the evaluators which make it almost impossible to rank the projects in terms of their performance.

In view of these problems, and the absence of a global development theory from which clear criteria to judge aid performance can be deduced, this paper follows a heuristic approach; it attempts to derive some general lessons from some of the evaluation studies that are available. The sections that follow summarize the findings of a 1986 BMZ report on nine years of project evaluations and discuss the results of a cross-sectional study on performance and impact of German projects in agriculture written in 1983. Some general conclusions are then derived from evaluation studies available on the MADIA countries. A summary is provided of a cross country evaluation study on German projects in Malawi that was prepared by the inspection unit of the BMZ in 1986 as a background document for the MADIA project. A discussion of some central issues or problem areas will then be used as the basis of the "concluding questions" formulated in the last section of this chapter.

Learning from Mistakes

In 1986, the BMZ published a cross-sectional analysis of the results of evaluations done on 6 percent of all German projects carried out between 1976 and 1984.[4] The most important findings of this analysis concerning effectiveness, or the degree of target attainment are presented here as

background for the experience gained in agricultural projects in the MADIA countries:

> About 30 percent of all projects examined were judged positively without reservations. Another third (33 percent) were assessed positively with reservations. About 25 percent of the projects were partly positive and partly negative. About 12 percent were assessed as being mainly negative in their effects.

It turned out that the effectiveness of development measures is strongly related to the overall economic situation of the country. Thus, positively rated projects were more numerous before the beginning of the world economic crisis in 1979/80. Major weaknesses reported in about a third of the projects inspected were the following:

- Insufficient knowledge of the general conditions;
- Insufficient attention paid to ecological and sociocultural conditions;
- Inadequate analysis of requirements and markets;
- A lack of data collections and evaluations;
- Insufficient participation of the target groups in planning and implementation, as well as insufficient informing of the population about the targets and advantages of the project and the significance of individual contribution;
- A lack of coordination between individual aid instruments with other donor institutions.

Weak projects often had deficiencies right from the beginning—especially when the period of project planning was too short.

In the field of *agriculture and forestry*, projects always have to deal with complex situations; this requires more detailed preliminary studies. In *agricultural extension*, the very absence of elaborated concepts often led to quick changes in the methods used—although the alterations themselves were not always based on sound rationales. In *plant production projects*, extension packages often must be better adapted to economic conditions and should be designed to maintain the long-term yield capacity. *Plant protection projects* "are sometimes too ambitious in scope instead of concentrating on key activities." Here, an early warning service and a control threshold specific to the region would be useful. The relevance of natural control methods must be emphasized. In *animal production*, an integrated approach seems promising: "upstream and downstream production areas and flanking services" should complement the sector of animal production.

In *regional development projects*, the assessment of the impact of the project as a whole often presents a problem. Here, as in other project types, the participation of the population in planning and decisionmaking often still needs improvement. In the process of planning, ethnological and sociological problems should receive greater attention—calling for adequate expertise. In complex projects, a step-by-step procedure starting with an orientation phase is advocated, since integrated regional development projects tend to try to cover too many fields and to become overly complex. Many demands are being made on the management capacity of these projects, and consequently the "handing-over" phase comes too late if ever.

The measurement of efficiency (cost-benefit ratio) frequently has not been undertaken by evaluation and inspection missions on agricultural projects. Although the costs are evident, it is often difficult to express the benefits in monetary terms and on a short-term basis. Because of the many practical problems involved in collecting and evaluating data, mostly qualitative assessments or general criticism have been provided on the projects. Thus evaluation is a mix of quantitative and qualitative data, supplemented by personal inspections by which BMZ tries to gain an insight into the project *reality*.

Finally, the *significance* of projects and programs—that is, their impact in terms of "sustained effects on the economic, social and cultural development of a country, region or target group" must be taken into consideration. From the evidence available, it can be stated that:

> ...the greatest developmental impact (significance) has been achieved by projects that have participated in removing bottlenecks in the field of basic needs, which have included target groups in the planning and implementation phases, which were integrated into a larger regional and sectoral context and which have cooperated with qualified, reliable local project executing agencies.

However, the sustainability of quite a number of projects is doubtful, and effects once achieved can "evaporate" in the long run. A growing concern for attaining sustainability of projects through the concentration of activities, follow-up work, and the stimulation of self-help work characterizes project discussions of recent years. The BMZ report "Learning from Mistakes" compiles the experiences gained with project work from a perspective of firsthand empirical evidence, but there is little that relates findings to the structural problems of development economies—such as growing ecological imbalances, the dissolution of a subsistence economy without a full realization of the market economy, or the structural deficits (if not the decay) of the state.

The Findings of the Schubert Study

A cross-sectional analysis of the effectiveness and sustainability of agricultural technical cooperation projects after handover, carried out in 1983 by Schubert et al., has become an important document on aid impact.[3] The main findings of this study are the following:

1. The picture is heterogeneous in terms of both positive and negative project effects and with regard to the reasons that have led to these effects. As a consequence of the diversity of project types, of the numerous factors that determine project effects, and, last but not least, an unavoidable evaluator bias, it is difficult to come to clear-cut general conclusions about aid effectiveness on the basis of project evaluation studies.

2. The analysis of the project evaluation reports leads to the conclusion that failures or even negative consequences in terms of effectiveness and significance are "not as great as may have been feared"—that is, there are some good and a few poor projects.

3. It turns out that measured against the projects' systems of objectives, "half of the projects exhibited a high level of effectiveness at the time of handover, but only a quarter could be rated high in significance. After handover, effectiveness of some of the projects declined but significance remained largely stable."

4. The statement often brought forward by experts that "when we leave, everything will fall apart" is not confirmed as a general rule. Sustainability of projects with high effectiveness and significance is better than expected.

5. Relatively small projects with sectorally limited activities and clear innovative messages have "more lasting effects than larger and more complex projects."

The Schubert report is the only study available that attempts to assess German aid in agriculture on a global scale. However, some methodological weaknesses constrain its relevance for a general assessment of German aid to Africa. First, the Schubert report deals exclusively with technical cooperation projects in the narrower sense—that is, expert-intensive projects executed by GTZ. Second, of the 24 projects analyzed, only 6 are located in Sub-Saharan Africa and only 3 in the MADIA countries. Finally, the study analyzes the effectiveness of projects in terms of goal achievement only, taking the goals and targets as they were formulated in the planning studies or the respective terms of reference as given. It neither asks how consistent these project goals were with the development needs of the country concerned nor judges the efficiency of the projects in terms of cost-benefit indicators.

A Summary of Conclusions of the Evaluation Reports on Projects in the MADIA Countries

Even if one takes into account that the "evaluator bias" probably has positive rather than negative aspects, it is evident that the picture for the MADIA countries as a whole is mixed—but not too disappointing. There are many good and some very good projects, i.e., projects the performance of which had been judged as being positive by evaluation teams including, as a rule, staff from the recipient country itself. Only one project out of about 25 was rated a complete failure. All other projects were criticized for various reasons, but for more than half of them, the evaluation proved good or at least not bad. In all projects, even the ones with poor performance, the conclusion was to seek solutions to the problems identified so as to improve their respective impact. There are some cases where projects that were considered extremely difficult if not hopeless in the early stages—like the German Assisted Settlement projects in Kenya—later on developed very well.

If one tries to summarize the critical remarks of the evaluation reports, there are five points that are repeated:

1. Many evaluation reports state that the objectives of the projects under review were not fully clear. This deficiency was, as a rule, traced back to the identification and planning phase of the project. For example, the evaluation study on the Food Security Programme in Kenya's Samburu district, written by the evaluation unit of the BMZ, states that the objectives of the project had been very ambitious and unrealistic, and that the competent sectoral desk had started the project for political reasons in spite of its well-known risks and problems.

As a consequence, some projects were dissipating their energies in numerous activities of less relevance as compared to the main objective or stated activities that were not covered by the project plan. For example, the CENEEMA project in Cameroon established regional stations for lending heavy machinery to farmers and started bush clearing with its own equipment to the detriment of its original tasks, namely training and applied research.

2. Almost all reports call attention to the poor "framework conditions"—in particular the poor planning and implementation capability of the counterpart institution. A specific version of this complaint is the reference to severe budget constraints and bottlenecks (recurrent costs).

3. In some reports, the evaluators complain about the neglect of marketing problems and other constraints, such as the given sociocultural factors (acceptance of the project by farmers). Some evaluation studies note the absence of a general conceptual framework to help avoid the uncoordinated addition of single activities (TIRDEP in Tanzania, livestock projects in Cameroon and Kenya).

4. Many reports state that the projects performed quite well in infrastructure, institution building, training, and the like, but did not produce tangible effects in terms of increasing agricultural *production*. Considering the high priority accorded by German aid to the growth of food production, this criticism is rather serious. This point was also stressed in various particular projects like TIRDEP in Tanzania, the Drought Animal project in Cameroon, and the Salima project in Malawi.

5. Some studies explicitly mention the difficulty of not only starting and implementing a project, but also *evaluating* it if there is no answer to some general questions about agricultural development. These are necessary for judging whether the respective project approach was significant or not. The cross-sectional analysis of settlement projects, including those financed by German aid in Kenya, states that serious attention should be given to the notion that "it would be more efficient to increase production in already settled areas than to establish new settlement schemes in remote areas."

The Case of Malawi

In Malawi, German aid to agriculture was evaluated in 1986 by the inspection section of the BMZ as a part of the preparatory activities of the MADIA program. The report asks about the reasons behind a limited aid performance and tries to formulate its findings in such a way as to derive general conclusions for German aid in Malawi and other African countries. Four general messages are brought out by the inspection team. First, in terms of smallholder production, the effects were "far less satisfactory than expected," and "the impact of the measures can in the main be assessed as disappointing." The reason given by the report was that the extension programs had little to offer to smallholders, i.e., that the innovations German projects tried to spread (the introduction of hybrid maize) were not adapted to the needs and the potential of existing farming systems and the intrinsic logic of their development. Consequently, the team suggests doing more in the area of applied agricultural research with particular consideration of the socioeconomic situation of the "low-acceptance smallholder" and to develop new concepts and methods of agricultural extension on this basis. Second, the team highlights the necessity of assisting the Malawian government in cofinancing recurrent costs that occur as a consequence of sectoral adjustment and recurrent costs of projects cofinanced by foreign aid. The team believes that it is better to limit the amount of money spent for, e.g., oversized RDPs; to concentrate the efforts on smaller projects with better chances to perform successfully; and to spend more in financing recurrent counterpart costs, insofar as the latter are vital for the project concerned. Third, the report suggests investing more in rural infrastructure including resource-saving activities (fruit-tree growing). Finally, the team lists a set of general problems of rural smallholder development, which have to be dealt with by socioeconomic research in order to work out new strategies of agricultural and rural development.

Major Problems

The following section defines, in the light of available evidence, the general problem areas confronting German aid to African agriculture.

Overloading with goals. German projects and programs often are overloaded with sometimes hazy and overambitious goals. The multiplication of goals that aid programs and particular projects should pursue is partly the result of the tendency to establish policy consensus among constituencies with dissenting views by adding up their priorities in the aid program. Each new line of thinking in Bonn, every new concern about, say, women or the environment, adds a new set of goals to new and old projects and is often used to question projects that have shown good performance in terms of production and income creation—or, the other way round, to justify projects with poor results in terms that allude to intangibles such as social effects or institution building. The result is in some cases the tendency to fritter away scarce financial and human resources and to lose the "tangible content" of cooperation projects. In other cases, this overburdening leads to a blowing-up effect, binding increasing counterpart resources (trained manpower, budget) and inducing follow-up costs.

Does Germany take it too easy? Agricultural development is question and answer, trial and error. Development cooperation is challenged to find answers, to finance trials, and to learn from errors—thus shortening the costly detours that are unavoidable when a society develops. However the correct answers that rural Africa must seek under the pressure of population growth, environmental degradation, and all the other elements of social stress are difficult to find. Agricultural development *is* difficult. More than that, wrong answers given by donors via projects (or policy dialogue) risk worsening the situation—either if the donor pulls out after the mistakes made have become too evident or if the donor tries to solve the problem by a continuous financing of sunk costs.

If one reviews German aid projects in MADIA countries, it seems obvious that some projects reflect a "tendency to charge ahead of our knowledge base."[4] A good example is the Food Security Project in Senegal, which comprises storage building and the refinancing of a market intervention scheme for local cereals (millet and sorghum). Do we really know what happens within the extremely sensitive system of subsistence production, on-farm storage, local consumption, local small-scale trade (including barter) if producer prices paid for subsistence crops are subsidized?

German know-how in tropical agriculture originates and accumulates almost exclusively in the development expert community itself. There is almost no (more) direct transfer of expertise from agriculture at home to agriculture abroad. This does not necessarily constitute a comparative disadvantage of German aid, since Germany has had time to catch up. As compared to other donors, including those with a long colonial past, the German project staff is fairly well-prepared in terms of professionalism and motivation to do a good job abroad. The training of German experts is carried out by a rather elaborate system of institutions. However, the considerable efforts of these institutions to improve the professional training of German experts working in the tropics is not yet fully in the position to balance the deficiency of specific know-how, particularly if an aid agency or a consulting firm gets a project tender and has to look for qualified staff afterwards. In addition, there is pressure exerted on aid institutions to disburse the aid commitments made in bilateral negotiations. This leads in many cases to overoptimistic assumptions, e.g., in quantifying the parameters for cost-benefit calculations.

The point here is not to say simply that there should be "more research," but a more patient and comprehensive observation and analysis of the regional economy, the farming system, and the reasons for their stagnation, and, last but not least, the absorptive capacity of recipient countries in terms of budget and staff could lead to more caution in project identification and a considerable increase in aid efficiency.

Marginal locations and the rural poor as the main target group. German projects are often located in marginal regions, where it is easy to identify problems, but extremely difficult to find a clear message or an innovation package promising short- or medium-term production and income effects. This tendency reflects:

(1) Policy formulation under the strain of constituency concerns;
(2) The planning approach of the German Agency for Technical Cooperation, which is much more problem-oriented than resource-oriented (goals are formulated as "negative problems"); and
(3) A relatively weak bargaining power in the international competition among donors for "good" projects.

Of course, development cooperation is not for the rich and the privileged. But if poverty and income distribution concerns outweigh the developmental potential argument too much, there is a risk that the projects elaborated will not even reach the poor. Besides, there is sometimes a lot of semantic confusion with regard to the target group, mixing up the "rural poor," the "poorest of the poor," and the smallholder. This confusion and the resulting effacement of a clear distinction between social welfare activities and the self-help principle could be avoided by defining the target group as those small and medium farmers who seek survival and growth by introducing innovations that can be provided by development cooperation. Given the enormous development potential of small farms in Africa, there are a lot of poor and very poor people within this group.

The point here is simply that if one is too anxious with regard to income differentiations inherent to rural development, and if the definition of the "poor" is too exclusive, German aid risks punishing itself in being tangled up in projects that may be justified *ex ante* with convincing intentions but that produce poor results in terms of production development. Aid programs consequently will be tempted into financing subsidies with questionable economic effects and high social opportunity costs in the long run, thus coming into conflict with the basic principle of German aid—the self-help perception, i.e., the principle to work ourselves out of the aid projects. Furthermore, an overly rigid poverty orientation leads directly to the claim to a stronger local pressure in aid agencies and NGOs in the rural areas in order to identify target groups, to motivate them, and to allow them to participate in a program conceived by donors.[5] Thus, defining the target group in terms of poverty exclusively could lead to new forms of paternalism, which would be contradictory to all principles of development cooperation.

Framework conditions and consistency problems. Almost every person interviewed drew attention to the "difficult framework conditions" of bilateral projects. This

reference took two different forms: (1) that too little attention was paid by the donor's agencies or consultants to the given socioeconomic environment of projects during identification and early planning stages, or (2) that the macro- and sectoral policies or nonpolicies of the recipient country concerned provided too many constraints for a project to be really successful.

In many cases, bottlenecks and difficulties labeled by donors as unsuitable or unacceptable framework conditions simply reflect the neglect of economic consistency during the identification and planning stage of a project.

The lack of minimum requirements in terms of intra- and intersectoral consistency is a very old problem. For instance, the maize project in Senegal has produced excellent results in terms of seed production and multiplication, but there are problems in finding a market for the maize produced through high-yielding varieties. Various similar examples could be quoted to show clearly how persistent and stubborn relatively banal and simple problems such as the neglect of market constraints can be.

The reason behind this is obviously not only poor efficiency of feedback and "learning by doing" procedures, but also an overly simplistic view of a suitable sectoral allocation of aid. German aid shows a sort of agricultural bias that is not always helpful in terms of aid efficiency. It may be true that recipient countries should consider agricultural development a priority area for public attention and investment and should change the "urban bias" of their domestic policies. But this does not mean that, from a donor's perspective, doing something in or for agriculture is always a good thing—irrespective of sectoral interdependencies; market, or input constraints; higher marginal returns to capital in neighboring sectors and subsectors (e.g., agro-industry); and, with regard to technical cooperation, the "comparative advantage" of a donor in terms of specific know-how. As far as financial cooperation is concerned, one should keep in mind that a factor that is obviously scarce in the view of a country and its economy, i.e., capital, is not necessarily the most binding constraint on agricultural projects that are refinanced with foreign capital inflows. The fact that countries that urgently need fresh money for their macroeconomic rehabilitation have the greatest problems in prompt aid disbursement is proof of inappropriate allocation decisions, rather than a poor implementation capability on the part of the recipient country.

Institution building. In view of the well-known difficulties inherent in the traditional transfer of technology approach, it seems to be good advice for a donor country like Germany to focus on strengthening the institutional and human capabilities of an African country rather than to rely on technical cooperation in the very narrow sense of the term. If framework conditions are detrimental for goal achievement, why not create better conditions by building up and improving the respective institutions? Indeed, the German approach to cooperation implies a strong public institution-building component. However, state bureaucracies and parastatals in African countries are, for several reasons, not always the most dynamic actors in terms of improving agricultural development. In many cases, the German contribution is mainly to get this machinery moving, and only a small part of the funds is allocated to activities that create direct benefits in terms of income formation. This leads to an interesting contradiction: German aid aims, in principle, at improving the economic and social living conditions of individual farmers as small-scale entrepreneurs—but, on the way to that goal, most of the funds are lost in building up or repairing a large state bureaucracy, which has little to offer to farmers in terms of innovation messages. This does not mean that institution building as such is always a bad thing. There are several cases where the institution-building component contributed a great deal to a good project performance, as in the GAT program in Kenya. In several projects, however, the strong institution-building component leads to difficulties of foreign staff integration that would not come up to that degree in innovation-oriented projects. If German experts are in a purely advisory function in an African administration, they risk isolation from decisionmaking—in particular if they have no right to allow budget aid components of the project to be disbursed. An evaluation report on the FONADER project in Cameroon explains that the main bottleneck of the project is the institutional structure and the behavior of the counterpart institution. The evaluators criticize that the German experts had been employed as "academic subordinates for erratic subjects rather than as authorized consultants for specific problem solutions."

Line functions of expatriates have been a good solution in some projects, as e.g., in the GAT project in Kenya. The key issue, however, was not the full integration of the experts into the Kenyan administration, but the "matrix" structure of the project: The German staff in the ministry was in the position to initiate and to coordinate many innovation-oriented subprojects cofinanced by Germany in a rather flexible way. However, line functions of expatriates are not, as a rule, consistent with the philosophy of strengthening the administrative capability of the recipient country. In addition, a recipient country may perceive a heavy presence of expatriates as unfair competition against their own personnel. This has led in Kenya to the absurd but understandable situation that the Kenyan government had to pursue a sort of containment policy in order to keep the number of expatriates consistent with the absorptive capacity of the administration, as well as with the high qualification standards of its own staff. As a conclusion, the authors do not challenge the need for institution building as such, although they consider it important that the institutions that foreign aid establishes, maintains, or repairs, not remain empty in terms of innovation messages.

Method problems in project analysis and feedback. Since the late 1960s, the German aid administration and research institutes like the German Development Institute in Berlin have made continuous efforts to enlarge and refine the analytical toolbox of planning and evaluating aid programs, and to adjust the methodology to both changing aid concepts and growing experience acquired during project implementation.

There are, however, some problems. First, it must be acknowledged that German aid is really trying to learn from earlier mistakes. But the error-embracing approach works only if the institutions are ready and able to *react* to critical evaluation reports on projects or to cross-sectional studies. Individual evaluators and even the inspection unit of the BMZ are sometimes under the impression that their efforts in analyzing projects do not trigger the necessary decisions to be taken in the operational units of the ministry and the executing agencies.

Second, evaluation and planning instruments cannot fill the gap of a poor data base or deficiencies in understanding agricultural development. Today, the links between

policy formulation and the project level are established by analytical instruments developed on the basis of the Little-Mireless version of CBA and, in the late 1970s, the "logical framework approach." The latter approach provided the base of the "goal-oriented project planning" approach (ZOPP) that GTZ today uses for all technical cooperation projects. However, both instruments are weak in the sense that they design a future and compare it to the present without making explicit *how* a farming system or a rural society changes. Furthermore, ZOPP and CBA often are applied *after* the project decision already has been taken, so that particularly ZOPP is used as a training tool rather than as an instrument of decisionmaking. But ZOPP and *ex ante* CBA only make sense if the systems to which they are applied are not just black boxes, but if the projects under review are understood in terms of "what happens if." If applied to programs where it is not clear what happens within a socioeconomic system when one changes parameters such as prices, factor proportions, and technologies, or when the assumptions on project impacts are too optimistic, the outcomes of ZOPP or CBA will be necessarily misleading or, in the best case, meaningless.

These method gaps can only be closed by laying much more emphasis on *empirical research and analysis* in order to understand how agriculture behaves and develops, in particular by "farming system analysis," in which Germany has a long tradition. German aid should make more use of this tool to avoid action without effects, institutions without messages, and planning without facts.

A Summary of Open Questions

Questions Instead of Recommendations

After almost 30 years of cooperation with African countries in the agricultural sector, German aid has acquired reliable experience and learned lessons by observing, studying, and learning from mistakes made and successes achieved. However, it would be inappropriate to derive at the end of this report a list of simplified recommendations from these findings. It is one thing to summarize the problems analyzed, but another to transform the collected information into a program for future action. The problem is not only that each country and each project is, in a way, a world in itself, so that overly generalized recommendations would not fit into the particular characteristics of a specific country program or a project, but also the fact that nobody knows exactly the right direction for African agriculture to follow in the next decade. Thus a concluding list of recommendations would be a risky exercise and an unfair one, as there might be—and there certainly are—scholars, experts, administrators, and politicians who would not share the opinion of the authors of this report or who might even hold the opposite view.

Are African Countries "Overaided"?

The manyfold obstacles to the identification of "good" projects and the severe disbursement problems in the aid program of all donors have led many observers to the conclusions that African countries are "overaided" and that the absorptive capacity of the administration is exhausted or even overdrawn by donors. It is indeed difficult not to come to that conclusion if one knows the hard business of finding projects—and if one takes note of the amount of time spent by African administrators on receiving one aid mission after the other. If, beyond the point of maximum absorptive capacity, there is a reverse relation between disbursement ease and aid efficiency, the conclusion would be, theoretically, to reduce aid commitments at the level of project- or program-bound financial transfers. The authors of this report have a tendency to agree in principle with this line of thinking and to believe that in some cases (Senegal, Kenya) it would be better to improve the quality of aid projects than to increase the disbursement speed—even if growing quality pretensions would lead to shrinking disbursement chances. However, there are competent people who support exactly the opposite view. It is argued that poverty in Africa will soon reach a dimension that will not allow a stagnation or even a reduction of aid commitments. In this view, the absorptive capacity problem reflects donor conditionalities and restrictions rather than management and administration bottlenecks at the recipient country's end. Consequently, donors should be ready to soften the conditionalities with particular reference to the recurrent costs that should be included in foreign aid contributions. In addition, donors could do more in the area of rural infrastructure, including investment in resource- and environment-protecting activities. Furthermore, in view of the population growth rates, the problems created by intra-African migration, the employment situation in the cities, the speed of desertification, and the threat of famine and malnutrition, donors should be less restrictive with regard to the social component of foreign aid. Finally, the absorptive capacity problem results partly from the tradition that donors channel their contributions to the target groups through the governments and their inefficient civil service instead of looking for NGOs such as rural cooperatives that are more efficient in terms of aid quality and disbursement ease.

But is project- and program-bound cooperation really the proper way to increase the volume of transfers? Or should one again take up the pros and cons of the massive transfer issue, as discussed some years ago in the context of the New International Economic Order?

More or Less Aid to Agriculture?

German aid shows a growing sort of agricultural bias. The need for giving a higher priority to agriculture by the governments of African countries does not, however, necessarily mean that a donor should concentrate its efforts too much in that sector. Indeed, there are some arguments that urge rethinking of the sectoral allocation of German aid.

The first point is that almost all projects that are successful in increasing agricultural production are, sooner or later, confronted with marketing problems. Obviously, under the impression of immediate and increasing food shortages in a fast growing population, the trivial truth of the nonidentity of need and demand is too often overlooked, tempting planners into overoptimistic assumptions about the markets for agricultural produce. Second, there are many projects, in particular the big Rural Development Programmes, which have little "hardware" to offer to

farmers. This occurs when there are no tested innovations available that fit into the development logic of present farming systems and that are consistent with the various social constraints of agricultural development. Third, there is a particular problem with regard to financial cooperation. A lending institution like the KfW has, as a rule, only one contribution to offer, namely capital, and it is evident that in many cases capital is by no means the most binding constraint on rural development. All this leads to the question of whether a bilateral donor like Germany should shift the emphasis of its aid program of technological and institutional know-how to industry or to the service sector.

Finally, it must be asked if the low world market prices, in particular for cereals like wheat and rice, are a long-term reality that has to be accepted, and whether these prices are the result of surplus production and dumping practices of the United States and the EC. German aid is not aiming for full autarky of African countries in food production. However, the principle of "achieving food security on the basis of the country's own efforts" and the importance accorded to food self-sufficiency result in a strong priority for food production as compared to export crops. In view of the realistic outlook for a continuous overproduction of cereals not only in traditional surplus countries in the OECD, but also in Southeast Asia and Latin America, the optimum degree of food self-sufficiency in Africa needs further rethinking.

Focusing on Production Increase?

One of the results of the evaluation studies is that smaller technical cooperation projects that concentrated on a clear and tangible production-oriented message performed better than did large programs aiming at comprehensive and "soft" goals such as institution building. This experience is shared with the outcome of other donor projects. However, as pointed out above, it turned out to be very difficult in many projects to identify such tangible innovations in agricultural production with a critical visible minimum effect. The report on the German aid program in Malawi quoted above goes so far as to call into question whether extension-oriented projects bear visible productivity effects at all. The conclusion then would be either to influence production by *indirect* measures, such as price policies, or to concentrate on infrastructure in the broader sense—including education, training, and research, which may have a long-term effect on productivity but which are not measured against short-term production indicators.

A careful consideration of problems in a recipient country and of donors' capabilities could, for some countries, result in a gradual shift from production-oriented extension projects to medium-term programs in infrastructure. In any case, the basic principle should be to ask and to answer the questions "what is the problem," and "what have we to offer to solve it," at the same time.

Should the Target Group Orientation of German Aid be Modified?

This paper has argued for a more precise definition of the target group of German aid in the agricultural sector. The suggestion was to define the target group as the African smallholder with his family, who seeks survival and growth by accepting and introducing innovations that could be offered by bilateral cooperation projects. As there are many poor people within that group, there would be no need to define the target group in terms of absolute poverty. On the contrary, the inclusion of acceptance and potential criteria in the target group could improve project efficiency (and probably complicate project identification) in particular with reference to the aim of really reaching the rural poor.

Independent from official wording, the aid administration, i.e., the BMZ and the two agencies GTZ and KfW have shifted gradually toward a more pragmatic definition of the target group, so that this suggestion probably will not lead to a controversial discussion in the German aid system.

The real question is a methodological one: How and by what instrument can the target group, however defined, be reached? How far can it be proved that the "basic needs" approach, which was designed in the late 1960s and has since been made one of the basic features of German aid, has indeed produced better results in terms of income creation and poverty elimination than did the traditional approaches that relied more on the market principle and "trickle-down" effects? German aid could again have more confidence in the market principle as the most important component of mixed economic systems, without leaving behind the basic needs principle as such. This could help to overcome some bewildering inconsistencies in German aid. Germany relies on a free market approach when supporting the IMF and World Bank in adjustment issues, but its aid concepts show a curious timidity of market mechanisms (e.g., with regard to the role of private merchants in rural areas) and at least a verbal preponderance of social concerns like equity or resorting to the poorest of the poor in the target group. It also sometimes follows purely mercantilistic lines of thinking in shaping and implementing its aid program (maintenance and repair of centralized parastatals and the undisputed priority of food self-sufficiency). This leads in some cases to strange contradictions, if, e.g., Germany strongly supports Senegal's New Agricultural Policy, designed with the help of the World Bank and the Paris Club, but opposes with the same verve the policies pursued within the framework that trim organizations that are the counterpart institutions of a poverty-oriented German project.

Here again it is obvious that the spectrum of opinions within the aid community is rather broad and controversial.

Does Germany Need a New Aid Concept?

In the absence of a widely accepted general theory of development, an aid concept cannot be developed by deduction, but must grow from below on the basis of a heuristic and pluralistic learning-by-doing and error-embracing approach. Thus the answer to the question often asked inside and outside the aid community as to whether Germany should change its aid concept on principle is a misleading one. It would be of little use to sit together in the upper floors of BMZ, GTZ, and KfW to design a new aid philosophy. However, it would be equally wrong to lean back and to continue development business as usual. The MADIA program has brought the core problems of cooperation in agriculture to the surface, and this chance should be used by all donors to rethink their aid programs on the basis of hard-won experience in their programs.

Notes

1. While Nigeria is considered in this section, it is excluded from the remainder of the chapters. When Nigeria joined OPEC in 1971, new commitments to this country were sharply reduced. The German decision not to continue bilateral aid programs with OPEC countries will not be discussed here.

2. Federal Ministry for Economic Cooperation, "Learning from Mistakes—Nine Years of Evaluating Project Reality," Bonn, 1986.

3. B. Schubert, "Sustainability of the Effects of Agricultural Projects in German Technical Cooperation: Methodology and Selected Findings of a Cross-Sectional Analysis of 24 Agricultural Projects after Handover to Partner Countries," in *Quarterly Journal of International Agriculture*, vol. 24, no. 3. July-Sept. 1985, pp. 212-241.

4. Bruce F. Johnston, Allan Hoben, Dirk W. Dijkerman and William K. Jaeger. "An Assessment of A.I.D. Activities to Promote Agricultural and Rural Development in Sub-Saharan Africa." MADIA Working Paper, Washington, D.C., 1987.

5. Deutsches Institut für Entwicklungspolitik (DIE): Strukturverzerrungen und Anspassungsprogramme in den armen Ländern Afrikas, Berlin 1985, p. 273 ff.

Chapter 9

Food Aid and Development in the MADIA Countries

JOHN W. MELLOR • RAJUL PANDYA-LORCH

Introduction

Why is food aid so extraordinarily controversial and its debate so heated? After all, all foreign assistance sooner or later takes the form of specific commodities in development projects. Without counter-measures all forms of foreign assistance distort prices and resource allocation at the general level through the real exchange rate and more specifically through the effect on the prices of particular commodities and services. All foreign assistance tends to breed dependency. The issue, however, is not distortion or dependency per se, but whether or not the foreign assistance is used in such a way that both the distortions and the dependency can be minimized and accelerated, self-reliant growth fostered.

Food aid is controversial because in developed and developing countries alike the politics of food are extraordinarily important and complex. Effective use of food aid particularly in pursuit of its comparative advantage in rural development and poverty alleviation is complex and has political ramifications in both the donor and recipient countries.

In developing countries the politics of food are crucial. A high proportion of the population spends 50 to 80 percent of its income on food. In those circumstances, temporary shortages of food due to unanticipated bad weather, poor stock policy, inadequate planning with respect to commercial or food aid imports, or purposive actions by foreign assistance donors bear heavily on the poor. Governments wish to avoid such circumstances and to shift the blame if they arise. Further, if the reliability of food aid is in question, it may be politically prudent not to use it in long-term poverty alleviation or rural development projects for fear of repercussions from sudden stoppages. This affects not only the willingness to receive food aid but also how it is allocated.

The politics of food and food aid are quite different in developed countries but no less complex and important. On the one hand, food aid provides an outlet for surplus stocks arising from price support policies. It can reduce both the cost and the visibility of farm support. On the other hand, precisely because food aid relieves the political pressure from the cost of building food stocks or subsidizing exports, it is opposed by those who seek major structural adjustment in agriculture. If food aid is used to forward rural development for which it is most effective, there is conceivably a question that it may foster competition. Food aid by its definition is useful for reducing poverty and thus gains a lobby from humanitarians but then often quickly loses that lobby because of the inevitable imperfections in the administration of food aid.

Further impeding effective use of food aid is the complexity and difficulty of the conceptual, political, and administrative processes involved in its effective utilization leaving apparent and real inefficiency in its wake.

From a development point of view, food aid provides the goods to be purchased by additionally employed people and thus facilitates more labor mobilization than would otherwise be the case. But labor mobilization almost always requires a high degree of decentralization. It is mobilized in the dispersed private small- and medium-scale sectors and in the construction of geographically dispersed rural infrastructure. In contrast, developing countries tend to be administratively and politically centralized and to have ineffective local governmental structures, especially in rural areas. It is not accidental that of the MADIA countries, Kenya—the most oriented politically and administratively to the rural areas—has done best in agriculture and has made the most effective use of food aid.

There is another problem. Given the instability of food aid, it is sensible to view it as transitory income and to concentrate it on discrete, preferably capital construction projects that may be eliminated when the assistance declines. However, food is also a current expendable consumed by the poor. Thus, slowing down additional road construction with the cessation of food aid is reasonable, but cutting off the employment and hence food consumption of poor laborers is less so.

We can draw from the foregoing four sets of policy issues vital to effective use of food aid. Each of these issues is consecutively more specific to effective use of food aid. The broad macroeconomic issues of fiscal and pricing policies are as important to effective use of food aid as to other aspects of development. In particular, an agriculture price policy is important to determine the amount of food aid that can be effectively used. The political issues of choice of development strategies and the weight to the rural sector is particularly important to the use of food aid because of the value of food aid in rural road building. The importance of political and administrative decentralization has already been stated. Finally, the sub-sectoral issues of food-related road construction and technology-related agriculture are critical to high returns to food aid supported development projects. As we will see in a later comparison of Kenya and Tanzania, food aid is a two-edged sword that may be used in support of policies that foster agricultural and employment growth or in support of those that do not. The issue is policy and strategy, not the form of the aid flows.

A final point relates to the export concerns of developed, cereal exporting countries and the issue of the impact of food aid on production incentives in recipient countries. There are two pieces of empirical evidence that relate to this issue. First, virtually all countries which two decades ago were major users of food aid have become countries with accelerated growth in their agricultural sector, accelerated growth overall, and a sharp increase in commercial food imports. Second, the 24 developing countries with the highest growth rates in their basic food staple sectors increased their commercial food imports by some four times over the last 20-year period (Bachman and Paulino, 1979). Because of the strong stimulation of employment growth from accelerated agricultural growth, there is the natural comparative advantage of developing countries in high-employment activities and the interaction of agricultural and nonagricultural growth. There is the tendency in modern developing countries, once they pursue appropriate strategies of development, for domestic demand for food to increase far more rapidly than growth in domestic food supplies. We will return to this question later.

Food Aid in the MADIA Countries

Size

Food aid has been relatively less controversial in the MADIA countries than elsewhere, in part because it is modest in quantity. In 1984-86, for the six countries as a group, food aid averaged only 7 percent of net disbursements of Official Development Assistance; one percent of government revenue; 2 percent of cereal food consumption (over 1979-81, since data on cereal food consumption are not available reliably beyond 1983); and only 15 percent of cereal imports (see Table 1). (Figures calculated from food aid data in FAO, *Food Aid in Figures*; net disbursements of Official Development Assistance data in World Bank, *World Development Report*; government revenue data from IMF, *Government Finance Statistics Yearbook*; food consumption and cereal imports data from FAO, *Supply Utilization Accounts Tape*. Henceforth, unless otherwise noted, all statistics calculated from information in sources indicated above.)

In general, food aid has not been driving government revenues, cereal food consumption, ODA flows, or imports. However, these overall statistics mask major differences among MADIA countries—differences which seem to bear little relation to the economic circumstances of the various countries. (Table 1)

Nigeria has received essentially no food aid since 1972. Food aid has also been virtually absent in Cameroon, representing only one percent of official development assistance and seven percent of cereal imports for 1984-86. Similarly, for the same period, it has been more or less inconsequential in Malawi, representing 18 percent of cereal imports but less than one percent of cereal food consumption. In contrast, food aid has been of some consequence, but hardly a dominating element, in the other three MADIA countries—Kenya, Tanzania, and Senegal.

In Kenya, during the period 1980-86, while food aid comprised over half of all cereal imports, it represented less than five percent of cereal food consumption. More important, food aid was a substantial 12 percent of net disbursements of Official Development Assistance and 4 percent of government revenue. Thus, for Kenya, food aid may have been responsible for enlarged ODA and public expenditure without having affected food prices more than marginally.

Tanzania has had a level of food aid similar to Kenya's in every respect except as a percentage of ODA. In 1984-86, food aid comprised 43 percent of cereal imports—somewhat less than for Kenya. But for the longer period, 1981-86, the average level was the same. However, since Tanzania has been a larger recipient of financial assistance than Kenya, food aid has made up a smaller proportion of net disbursements of official development assistance—5 percent compared to Kenya's 12 percent. We can surmise that food aid was a much larger percentage of cereal food consumption and government revenues in Tanzania relative

Table 1
Size of food aid

	Cameroon	Kenya	Malawi	Nigeria	Senegal	Tanzania	All MADIA Countries
Volume of food aid (000 tons)							
Average over 1970/71-1972/73	4.3	1.8	0.3	21.7	30.3	8.0	66.6
Average over 1978/79-1980/81	7.2	89.6	7.9	0.0	91.1	126.2	321.9
Average over 1983/84-1985/86	8.9	200.3	4.8	0.0	132.9	110.7	457.6
Total for 1980/81-1985/86	52.9	1065.6	35.7	1.4	725.0	1046.8	2927.4
Food aid as percentage of cereal imports							
Average over 1970/71-1972/73	4.5	2.5	1.1	5.0	8.2	8.5	6.1
Average over 1978/79-1980/81	5.3	48.2	19.3	0.0	19.7	51.0	10.3
Average over 1983/84-1985/86	6.5	54.1	17.8	0.0	23.4	43.2	15.3
Total for 1980/81-1985/86	6.5	62.9	17.7	neg.	22.6	65.8	15.8
Food aid as percentage of food consumption							
Average over 1970/71-1972/73	0.7	0.1	0.0	0.4	4.8	0.7	0.6
Average over 1978/79-1980/81	0.9	4.6	0.7	0.0	10.4	5.6	2.1
Food aid as percentage of ODA, 1984-86	1.2	12.1	0.8	0.0	8.9	5.3	6.8
Food aid as percentage of government revenue, 1984-86	0.1	4.0	0.5	0.0	7.7*	n.a.	1.02**
ODA as percentage of government revenue, 1984-86	9.2	32.8	65.9	0.52	87.2*	n.a.	n.a.

Sources.
Volume of food aid from *Food Aid in Figures*, FAO, various years. Value of food aid calculated from information contained in *Food Aid in Figures*. Cereal imports and food consumption data from Supply Utilization Accounts Tape, FAO, 1984. Net disbursements of ODA from all sources from *World Development Report*, various years, World Bank. Government revenue from *Government Finance Statistics*, 1987, IMF.
Notes: * calculated only for 1984 due to data limitations.
** calculated excluding Tanzania since government revenue data not available for Tanzania.

to Kenya—thus its influence on policies towards food prices and public expenditure would be larger than in Kenya, but hardly a dominant element.

Because Senegal has been such a massive recipient of foreign aid and has historically been a major cereal importer, it is not surprising that food aid represents a much higher percentage of cereal food consumption (but still only 10 percent) than in the other MADIA countries. But at less than one-quarter of cereal imports and 8 percent of government revenue, it again cannot be said to be driving agricultural price policy or public expenditure policy. However, total cereal imports at half of cereal food consumption, and net disbursements of Official Development Assistance at nearly 90 percent of government revenues must drive food prices and public decisions very substantially.

Growth in Food Aid

Food aid has grown relatively rapidly in the MADIA countries as a whole, averaging 16 percent annual growth rate over 1971-86 (Table 2). The growth rate has been fastest in Kenya (50 percent) and Malawi (30 percent), and slowest in Cameroon (6 percent). Naturally it has been negative in Nigeria. It must be stressed, particularly for Kenya, that growth rates can appear very high if they start from a low base.

For all the MADIA countries except Nigeria, food aid has grown at a faster rate than cereal imports, which grew at 9 percent over the 1971-86 period. But a glance at Figure 1 shows clearly that food aid has not been driving imports, except possibly for Kenya and Tanzania (Table 2). The food aid and imports picture looks quite different so far in the 1980s compared to the 1970s. Growth rates of food aid have slowed down or even become negative for all of the MADIA countries except Cameroon. In Malawi and Tanzania, food aid growth rates turned negative. Only in Senegal did the food aid growth rate accelerate. For the MADIA countries as a group, cereal imports declined during the 1980s while food aid continued to grow slowly.

It is notable that the share of food aid to the MADIA countries as a subset of Sub-Saharan Africa grew somewhat in the early 1970s and reached a peak of one-quarter in 1980/81, and then declined steadily since. The relative decline is probably due largely to the substantial increase in food aid to more famine-prone areas such as Ethiopia and Sudan. One could also argue that the decline is a product partly of decline in food aid to Tanzania, which may be due to donor dissatisfaction with Tanzanian performance.

Major changes have occurred in the direction of food aid within the MADIA group since 1970/71. Nigeria used to be the largest recipient of food aid in the beginning of the 1970s followed by Senegal and Tanzania. By the end of the decade Nigeria was receiving no food aid and Tanzania and Senegal were the largest recipients. Kenya began to emerge as a major recipient and Cameroon and Malawi continued to receive small proportions of the MADIA food aid basket, which had meantime increased fivefold. By the second half of the 1980s, Kenya was the largest recipient of food aid and had increased its share of the MADIA food aid pie considerably. Thus the decade and a half since 1970/71 is characterized by the disappearance of Nigeria from the food aid scenario, the emergence of Kenya as a major recipient, the continuation of Senegal and Tanzania as significant recipients, and the continued marginal status of Cameroon and Malawi.

These various trends in food aid mark sharp differences in the development context of the three significant food aid recipients—Kenya, Tanzania, and Senegal. Kenya illustrates the case of food aid facilitating accelerated economic growth in the context of favorable development strategy and policy. Tanzania shows how food aid can mitigate the effect of anti-growth policies which bear particularly harshly on the poor via high food prices—and of course facilitating the continuation of those policies. Senegal is a country with both very bad luck in the weather and a poor policy context, partially bailed out by food aid. (See other MADIA papers for this concept of bad luck *vis-a-vis* bad policy.)

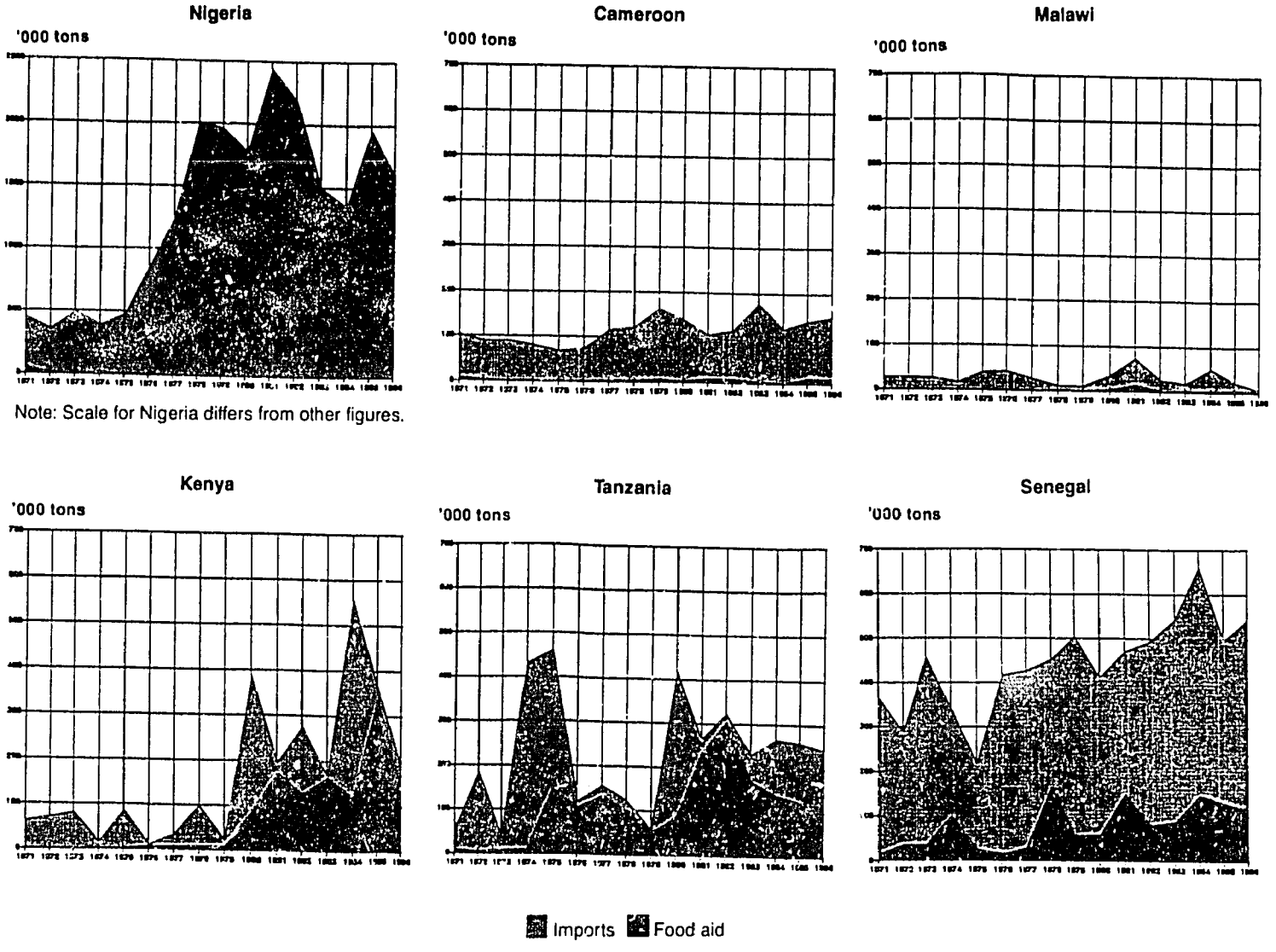
For Kenya, food imports grew rapidly in the context of development policies which were extremely favorable for nonfood agriculture production, quite favorable for food production and favorable for growth in nonagricultural production. The result has been rapid growth in employment and demand for food. In that context, cereal imports have grown rapidly and food aid has been effectively used to pay for a substantial proportion of those imports, thereby allowing the foreign exchange component of capital formation to proceed rapidly in pursuit of an effective development strategy.

Table 2
Growth in food aid

	Growth Rate of Food Aid (%)			Growth Rate of Cereal Imports (%)		
	1971-80	1980-86	1971-86	1971-80	1980-86	1971-86
Cameroon	4.06	7.33	5.77	6.00	2.73	4.20
Kenya	45.28	10.29	49.54	6.02	1.27	16.99
Malawi	39.58	-4.78	30.01	-3.76	-22.62	-2.55
Nigeria	-26.67*	—	—	23.93	-4.34	12.71
Senegal	12.05	8.43	12.61	3.92	4.44	4.15
Tanzania	40.15	-10.04	21.43	6.63	-6.44	6.92
All MADIA countries	15.87	3.03	15.77	14.58	-2.6	3.9
All MADIA countries, excluding Nigeria	23.06	3.03	18.79	5.17	0.12	5.46
Sub-Saharan Africa	12.95	16.41	16.02			
Sub-Saharan Africa, excluding MADIA	12.42	18.96	16.02			

Sources for food aid and cereal imports—see Table 1.
* Growth rate for 1971-76.

Figure 1
Cereal food aid and imports



Note: Scale for Nigeria differs from other figures.

Notes:
1. Cereal food aid data is on a crop-year basis (July/June) whereas import data is on a calendar-year basis. In these figures, the crop year is represented by the second half of its year. Therefore, crop year 1980/81 would be represented as calendar year 1981.
2. Discrepancies were observed for figures for any one year in various issues of the *FAO Trade Yearbook*. Therefore, the figure in the yearbook with the most opportunity for revision was taken. For example, if the 1983 figure was given in the 1983, 1984, and 1985 yearbooks, the figure in the 1985 yearbook was accepted.

Sources: FAO. Various years. *Food Aid in Figures*. Rome: FAO.
FAO. Various years. *FAO Trade Yearbook*. Rome: FAO.

Tanzania is the opposite case. The Tanzanian development strategy rhetorically favored the agricultural sector, rural investments, rural participation and decentralization but in practice favored the growth of capital-intensive urban industry and parastatal employment (see MADIA papers on Tanzania). In particular, large foreign assistance flows allowed rapid growth in public employment specifically and in urban growth generally. At the same time, policies towards the rural sector, including lack of maintenance of rural infrastructure, resulted in decreased commercialization of agriculture. The result of these divergent forces in the rural and urban sectors was a tremendous increase in food imports. For example, in the period 1980 to 1984, food imports increased by two-thirds from the 1975 to 1979 period. Note, however, that while food aid clearly facilitated these policies, they were so entrenched that the drop in food aid in 1982 following donor disenchantment did not result in a significant decline in imports between 1982 and 1986.

For Senegal, not particularly favorable development policies in the context of extraordinarily bad weather resulted in large and steadily growing food imports. Food aid grew at a somewhat faster pace from an initially low base and never reached more than one-fifth to one-fourth of imports.

Fluctuations

Food production instability bears particularly harshly on the poor, who make 10 times as much adjustment in consumption in response to general reduction in supplies as do the rich (comparing the top bottom 20 percent with the top 5 percent in income distribution) (Mellor, 1978). The least expensive means of providing stability in food supplies in the face of instability in production is through food imports. Thus food aid offers an opportunity to meet an important problem by relieving the hard currency demands of providing food security. It can fill this function effectively even when food aid levels are quite low.

As can be seen from Figure 2, food production fluctuates immensely in all the MADIA countries—although somewhat more in Kenya, Senegal, and Tanzania, and somewhat less in Cameroon and Malawi. In none of these countries can food aid be said to play a stabilizing role. It is, of course, inconsequential and hence irrelevant in Malawi and Cameroon, despite immense fluctuations in production in Malawi which has a very poor population that must suffer greatly in years of poor crops. In Senegal, food aid fluctuations appear to be destabilizing to food availability. In Kenya, food aid has probably been neutral with respect to stabilization and perhaps mildly stabilizing in Tanzania, whose donors have probably been more sympathetic to mitigating the worst manifestations of poverty. Clearly in the MADIA countries, as a group, an important opportunity has been lost of using food aid for food security purposes as well as for stabilizing growth.

Commodity Composition of Food Aid

The commodity composition of food aid provides one of the major controversies in the food aid debate. The composition has changed dramatically in the MADIA countries over the years. During the early 1970s, coarse grains dominated the food aid receipts of all MADIA countries except Kenya (Table 3). Almost four-fifths of food aid received by all six MADIA countries comprised coarse grains. Rice was not even a component of food aid. A decade and a half later, almost one-fifth of all cereal food aid in the MADIA countries was rice and another two-fifths was wheat. The share of coarse grains declined to half of its previous level.

Malawi, a minor food aid recipient, is the only country where food aid commodity composition has remained unaltered over the years. Wheat makes up about a tenth of food aid, rice about 2 to 3 percent, and the remainder comes from coarse grains. In contrast, Cameroon, the other minor recipient, has had its food aid package altered considerably over the years—it received no rice in the early 1970s but in the mid-1980s over four-fifths of its food aid was in the form of rice. From the early 1970s, wheat was dominant in Kenya's food aid package and it continues to be so even though rice and coarse grains both increased their share. In Senegal and Tanzania, the food aid received was diversified away from coarse grains towards rice and wheat to achieve a more even distribution.

Probably the principal reason for the shift of food aid towards rice and wheat was rapid urbanization, itself substantially driven by foreign aid. It is currently believed that rice and wheat are primarily consumed by high-income urban consumers and that food aid has thereby encouraged a shift in tastes in those directions. However, evidence from consumer surveys suggests, at least in the case of rice, that it is the increasing value of time, especially women's time, that is driving the increased consumption.

Low-income urban consumers in Ouagadougou spend a higher proportion of their income on rice than do high-income urban consumers (Reardon, et al., 1987). Similarly, although a decline in relative rice prices at the international level has no doubt favored a shift in consumption towards rice, there is no evidence that food aid has pushed those relationships in African countries further in that direction (Delgado, 1987). Wheat too, the world over, is an increasingly favored commodity for its convenience. Note, even in Sri Lanka, value of women's time is the single most important explanation of wheat consumption (Senauer, Sahn and Alderman, 1986). Thus it would seem that the shift in commodity composition of food aid is driven more by domestic demand shifts than donor pressures.

Comparative Donor Importance

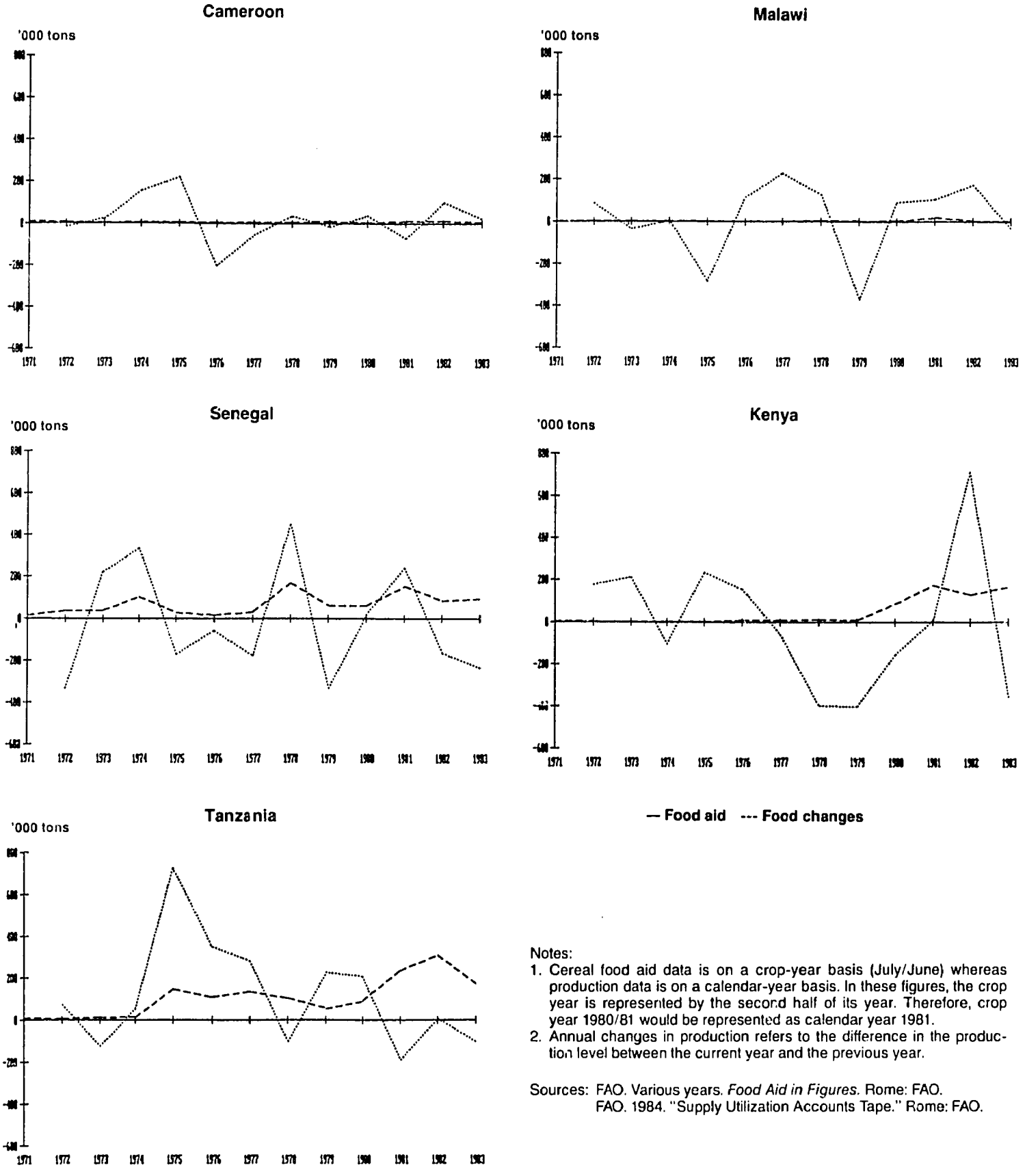
Food aid in the MADIA countries is characterized by a multiplicity of donors with weight of various donors varying among the recipients. This is probably advantageous to the quantity and quality of aid flows as donors pursue their respective comparative advantage (a point underlined by

Table 3
Commodity composition of food aid

	Average over 1970/71-1972/73 % Share in Total Cereal Aid			Average over 1983/84-1985/86 % Share in Total Cereal Aid		
	Wheat	Rice	Coarse Grains	Wheat	Rice	Coarse Grains
Cameroon	46.2	0.0	53.8	0.0	82.4	17.6
Kenya	83.6	0.0	16.4	66.6	7.2	26.2
Malawi	10.0	0.0	90.0	11.8	2.8	85.4
Nigeria	24.9	0.0	75.1	0.0	0.0	0.0
Senegal	10.6	0.0	89.4	23.9	22.7	53.4
Tanzania	23.3	0.0	76.7	36.7	23.2	40.1
All MADIA countries	21.1	0.0	78.9	45.1	17.0	37.9
All MADIA Countries, excluding Nigeria	19.3	0.0	80.74	45.1	17.0	37.9
Sub-Saharan Africa	55.8	3.72	40.5	51.0	14.7	34.2
Sub-Saharan Africa, excluding MADIA countries	61.3	4.31	34.4	51.8	14.4	33.8

Source: Calculated from information in *Food Aid Figures*, FAO, various years.

Figure 2
Cereal food aid and annual production changes



Notes:
1. Cereal food aid data is on a crop-year basis (July/June) whereas production data is on a calendar-year basis. In these figures, the crop year is represented by the second half of its year. Therefore, crop year 1980/81 would be represented as calendar year 1981.
2. Annual changes in production refers to the difference in the production level between the current year and the previous year.

Sources: FAO. Various years. *Food Aid in Figures.* Rome: FAO.
FAO. 1984. "Supply Utilization Accounts Tape." Rome: FAO.

many components of the MADIA study).

The United States provides two-fifths of the food aid, but the EEC Community Action plus European bilateral donors are almost as large (Tables 4A and 4B). Australia and Canada together are nearly half as large as the EEC Community Action and European bilateral donors. The United States was the largest donor since 1981/82 in three of the five countries receiving food aid. In Cameroon and Kenya, the United States has provided more than half of the food aid receipts since 1981/82. In Senegal, just less than half of food aid received since 1981/82 came from the United States. However, Australia, followed closely by Japan, was the largest bilateral food aid donor to Tanzania, and purchases by the WFP were the single largest source of food aid to Malawi. Tanzania stands out for another reason: there was no one dominant donor; no one donor has provided more than one-fifth of Tanzania's food aid receipts since 1981/82. Tanzania has received food aid from 22 donors since 1981/82.

The food aid donor scene is further characterized by a multiplicity of donors who intermittently entered and exited the food aid scene, responding in times of emergency food crises. Such donors included Norway, Sweden, and the Netherlands. Even India and China have provided food aid in some years.

Table 4
Comparative donor importance

A. Volume of cereal food aid received from donors, 1981/82-1985/86 (000 tons)

Donor	Cameroon	Kenya	Malawi	Nigeria	Senegal	Tanzania	MADIA	Sub-Saharan Africa
Australia	1.3	80.0	0.1	-	5.8	132.5	219.7	726.4
Canada	0.6	54.5	-	-	57.4	36.2	148.7	1035.9
E.E.C. (Community Action)	-	112.1	0.4	-	92.6	103.6	308.7	2366.7
Japan	1.9	32.1	0.1	1.4	22.5	125.2	183.2	787.9
United States	25.3	496.3	5.6	-	282.9	111.0	921.1	7139.4
Other MADIA donors*	-	37.5	3.4	-	42.8	80.8	164.5	1705.7
Other European**	0.6	65.7	0.4	-	37.2	132.0	235.4	1277.4
WFP Purchases	11.0	7.4	8.1	-	0.4	2.7	29.6	91.6
Others	-	7.0	0.1	-	39.6	83.6	130.3	1131.1
Total	40.7	892.6	18.2	1.4	581.2	807.6	2341.7	16262.1

B. Percentage shares of donors in cereal food aid receipts, 1981/82-1985/86

Donor	Cameroon	Kenya	Malawi	Nigeria	Senegal	Tanzania	MADIA	Sub-Saharan Africa
Australia	3.2	9.0	0.5	-	1.0	16.4	9.4	4.5
Canada	1.5	6.1	-	-	9.9	4.5	6.4	6.4
E.E.C. (Community Action)	-	12.6	2.2	-	15.9	12.8	13.2	14.6
Japan	4.7	3.6	0.5	100.0	3.9	15.5	7.8	4.8
United States	62.2	55.6	30.8	-	48.7	13.7	39.3	43.9
Other MADIA donors*	-	4.2	18.7	-	7.4	10.0	7.0	10.5
Other European**	1.5	7.4	2.2	-	6.4	16.3	10.1	7.9
WFP Purchases	27.0	0.8	44.5	-	0.1	0.3	1.3	0.6
Others	-	0.8	0.5	-	6.8	10.4	5.6	6.9
Total***	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Food Aid in Figures*, FAO, various years.
* Includes Denmark, France, Germany, Sweden, and the United Kingdom.
** Includes Belgium, Italy, Luxembourg, the Netherlands, Norway, Spain, and Switzerland.
*** Totals may not add up to 100.0 because of rounding.

Projected Absorptive Capacity for Food Aid[1]

An important issue with respect to food aid is how rapidly it can be increased and to what level, without distortions deleterious to growth. As long as food aid is growing no faster than the gap between domestic production and effective demand there will be no depression of relative food prices. Further, that rate of growth of food aid is consistent with the countries demonstrating the capacity to provide the institutional structures for utilizing increased food supplies.

Absorptive capacity for food aid should be a dynamic process. Both effective demand for food and supply grow over time—as does the prospective gap between the two. The institutional capacity for expanding employment, deploying food aid and for growth generally also grows over time. Hence, estimates of food aid absorptive capacity should themselves increase over time. One method of estimating that capacity is to project past trends of domestic supply and demand into the future. The gap so measured is an indication of the level of imports needed to keep relative prices constant. It is also an indicator of proven capacity to expand demand, whether by market forces, public employment, use of food aid to foster consumption or whatever, relative to a given rate of production increase.

Food aid should, of course, always be received in the context of a national agricultural price policy (so as to ensure that deleterious incentive effects do not occur) and a national agricultural production policy. The exercise of projecting past trends into the future magnifies nascent imbalances and should suggest corrective action to aid donor and recipient alike. In a well-operating economy, the more imports are filled by food aid the more foreign exchange and other resources are available for further acceleration of growth. However, it is reasonable to assume that some portion of export earnings might be used for an expansion of commercial imports, in a sense beginning the process of shift from food aid to commercial imports. The projections in Table 5 assume such an allocation to commercial imports.

Performing such an exercise (Table 5) for the MADIA countries is revealing of several points relevant to food aid. First, past trends for all the MADIA countries except Tanzania show a massive gap for the year 2000. In each case, the quantities are far greater than we would expect to be supplied. But the differences in the trends which generate these numbers are instructive.

Tanzania and Kenya are as usual the contrasting cases. Kenya has a moderately good record on growth in food supplies. But, as is usual in an economy where agriculture does well, employment and hence the effective demand for food has grown rapidly. That normal relation is much more powerful in Kenya because the smallholder export sector has been the leading edge in rural income growth, providing broad participation in growth and hence food demand without adding to food supplies. In this context, food flows into Kenya, at the level shown in Table 5, would quicken the development process. In these circumstances, it makes rational economic sense for Kenya to allocate scarce foreign exchange resources to the importation of food, since if that is not done, growth in employment would be choked off by rapidly rising food prices, to say nothing about the political problems which that might entail. However, allocating foreign exchange for food imports would reduce capital equipment and raw material imports which in turn may reduce the employment growth rate. In such a context, food aid can play an extraordinarily valuable role.

In the case of Tanzania, an abysmal record in both export crop production and food production and an even poorer performance in nonagricultural employment have constrained demand growth at the low level of domestic food production growth. The deterioration of rural infrastructure has made it necessary to feed the coastal cities from food imports, calling for large food imports. But poor growth and inevitable donor dissatisfaction have created a situation of no growth in absorptive capacity for food aid.

Clearly, Senegal has been rapidly increasing its capacity to utilize imports of food. This is significant because of the

Table 5
Projected absorptive capacity for food aid to the year 2000

Country	Volume of Food Aid (000 mt) Actual average 1984-86	Estimated absorption year 2000	Average Annual increments
Cameroon	8.9	1910	126.7
Kenya	200.3	5030	321.9
Malawi	4.8	1260	83.7
Nigeria	0.0	12190	812.7
Senegal	132.9	1250	74.5
Tanzania	110.7	0	
All MADIA Countries	457.6	21640	1419.6

Sources: 1. Estimates for year 2000 from Hannan Ezekiel, *Medium-Term Estimates of Demand-Based Food Aid Requirements and Their Variability* (update), December 1988. Estimate for Nigeria from additional work carried out later. Food aid requirements in this study are defined as "that part of the food import requirements of developing countries determined at a reasonable price level that are not filled by commercial food imports" (p. 3). The food import requirements themselves are defined as "the gap between total domestic use (TDU) and the total domestic production of food" (p. 3). Production is projected on the basis of past trends in growth of each staple food growth. Total domestic use is projected as the sum of its various components which in turn have been projected: (i) per capita food consumption is projected on the basis of trend rates of growth of per capita GNP and FAO projections of relevant income elasticities of demand and applied to trend per capita consumption in 1983—population projections are then used to obtain the total *food use;* (ii) *feed use* is estimated in a similar way to food use but the income elasticity of the demand for meat is used as a proxy for the income elasticity of the demand for feed; (iii) *seed use* is projected as a proportion of production (the proportion having been established in the base period; and (iv) *other uses* is projected as a proportion of the sum of food and feed uses (the proportion having been established in the base period). The sum of the projections of these four uses is the estimate for future total domestic use. Gross commercial imports are assumed to grow at the growth rate of per capita GNP; Exports are assumed to remain a constant proportion of production based on the period 1979-83.
2. Actual figures from *Food Aid in Figures.*
3. Average annual increments derived by dividing the difference between year 2000 and of 1984-86 by 15 which is the number of years.

deteriorating situation in its agriculture, which is of course partly due to policy and partly to the extremely bad weather situation.

Nigeria, of course, shows what happens when massive external resource flows allow food consumption to grow rapidly in the face of a poor agricultural record. If Nigeria were to be looked at from a food aid perspective, improvements in policy for development of agriculture would be an obvious condition of food aid growth (see the MADIA monograph on Nigeria).

Thus food aid needs may grow rapidly in the context of successful agricultural policies (e.g., Kenya); or continuous bad weather (e.g. Senegal); or unfavorable policies towards agriculture (e.g. Nigeria).

In the case of Malawi and Cameroon, neither cereal imports nor food aid have been substantial. In this context, one must raise the question, particularly for Malawi, whether the countries would have prospered more and poverty would have been less if there had been higher employment policies and consequently a more rapid growth in the demand for food matched by food aid growth. Of course, a smallholder agricultural growth policy should have been followed concurrently. Food aid could have played a positive role in Malawi. In a context more like that of Kenya, the same could be said for Cameroon.

Projects

If food aid is not to have a disincentive effect, it is important that it be associated with a development strategy which has a high employment content and hence provides rapid growth in the demand for food. The projections in the preceding section are one way to numericize these relations as a basis for program (not tied to specific projects) food aid. There is, however, much to be said for tying food aid to the project elements of such a strategy. Conceptually, this is easy to do since one of the most important investment items in a high employment strategy is rural infrastructure, particularly roads, which have a high employment and hence food component.

Project assistance is of course a potentially highly productive form of foreign assistance. This is because once broad macro policies and sectoral policies appropriate for growth are in place, the critical limitation for most developing countries and certainly those in contemporary Africa is trained manpower and institutional structures to make projects work. Projects are the foundation of growth. They are the actual items of investment that provide returns, and hence growth. There has been a recent diversion of foreign assistance attention away from projects, because we have been through a short-run period when the macro policies of developing countries were particularly inappropriate. But the reason for reforming those policies is to return to a favorable environment for projects. As that occurs, the need for projects which bring technical capacity increases rapidly.

There are particularly difficult project aspects of a high-employment strategy. On the one hand, much of the productive employment is in small- and medium-scale industries and in agriculture itself, both of which are carried out in the private sector. However, precisely because the high-employment activities tend to have very few economies of scale and hence are carried on under relatively small-scale conditions, there is a need for a great deal of public sector support for those private activities. Such public sector support ranges from provision of massive physical infrastructure to establishment of various institutions including credit, fertilizer distribution systems, and other critical areas of support to the private sector and the small- and medium-scale sectors.

The problem of project aid from different foreign aid donors being scattered over large numbers of very divergent types of projects has been noted elsewhere and in the MADIA study generally. Hence, there has been relatively little learning by doing and few scale economies obtained in the operation of these projects. In the early years of foreign assistance, projects tended to be large-scale in nature, such as power projects, large-scale irrigation, port development, and central infrastructure projects for which substantial economies of scale and learning by doing existed. As development assistance emphasized agriculture and small- and medium-scale private business, there has been a problem of excessive dispersion of projects. The succeeding paragraphs will argue the case for a major concentration of food aid and assistance generally on providing a complete grid of rural infrastructure. As we will see, the food requirements for such an effort are immense.

The logic for a massive investment in rural infrastructure is clear. Accelerated growth in the agricultural sector occurs through the application of productivity increasing technology (including new crops); commercialization, increased input use, and increased output for sale. These activities are not profitable unless the transaction costs for buying and selling are maintained at a low level. This requires good physical infrastructure. This commercialization/transaction cost argument for physical infrastructure is powerfully reinforced by the need for modern institutions, such as for fertilizer distribution, extension education, and credit systems, all of which are operated by trained people who require for professional and personal reasons ready access to commercial markets through public and other means of transportation (Ahmed and Hossain, 1989).

On theoretical grounds, we can say that rapid agricultural growth and its strong multipliers with other sectors of the economy will be restricted to areas of good infrastructure. In Bangladesh, areas which are otherwise similar in rural population density and agroecological conditions but have good infrastructure, have 30 percent more nonagricultural employment, 12 percent greater intensity of labor use per hectare, twice as much fertilizer use per hectare and so on, relative to areas lacking in physical infrastructure (Ahmed and Hossain, 1987). Similar results can be found in India and Zambia, where it can be seen that not only availability of, but also access to, rural infrastructure influences demand for both production and consumption goods and services; the higher the level of infrastructure and the better the access, the higher is the demand for these goods and services, [Wanmali, 1989(a) and Wanmali, 1989(b)]. The MADIA study's monograph on Nigeria documents the same conclusions.

A related point must be made. Agriculture is a major engine of growth not because it has a high growth rate (it does not), but because it has a large mass. But far too many countries try to develop with only a small fraction of the rural area integrated into commercial development. Recog-

nition of the importance of this issue is not facilitated by the foreign assistance official who innocently notes that everywhere he goes the roads are good—that is the problem and why more roads are needed.

We emphasize the importance of physical infrastructure in a chapter on food aid because of the extremely poor coverage of adequate infrastructure in the MADIA countries especially in their rural areas, and the consequent need for massive investment with a large employment and hence food consumption content. The current coverage of basic physical infrastructure, such as roads, railways, electricity grids, is very poor even in comparison with those of such South Asia which are themselves quite inadequate. A significant opportunity is open for food aid to make an effective contribution to that critical element of development.

The following exercise estimates the total labor and food costs of constructing a grid of all-weather rural roads that would provide full infrastructure coverage for the rural population of the MADIA countries. Definition of full coverage is taken from in-depth analyses for India in which full coverage is defined as all villages above 500 in population (at the time of the 1981 census) to be on an all-weather road and those with less than 500 persons population to be within 3 kilometers of an all-weather road in plain areas and 5 kilometers in hilly areas. India's plan is to have full coverage by the year 2001. It is currently about one-third of the way towards reaching full coverage. Rural Nigeria, in contrast, has only about 3 percent of the all-weather, rural road mileage in place to reach full coverage so defined.

The extent of full coverage of Nigeria was estimated by comparing the states of Nigeria with those of India[2] and relating the state target rural road densities (meters per square kilometer) in the year 2001[3] to the regions of Nigeria that corresponded with those Indian states. In this manner, a national rural road target density of 0.76 kilometer per square kilometer was established (Northern region: 0.69; Middle-Belt region: 0.54; and Southern region: 1.23). This compares with the existing national density of 0.02 km/sq. km. The existing length of the all-weather rural road network is about 17,000 kilometers. To arrive at the target length of about 677,000 kilometers,[4] an additional 660,000 kilometers of roads will have to be either constructed or rehabilitated from the existing non-all-weather rural road network. About 67,000 kilometers of rural roads (under the local government area rural road network) exist that could be rehabilitated. Under varying regional unit costs of rehabilitation (each region has differing topography, soils, and climate which at the very least cause cost differences), a total cost of rehabilitation of about $720 million is estimated. The remaining roads, 590,000 kilometers, will have to be constructed and again at varying regional construction costs.[5] The total cost of construction of additional roads comes to $11 billion, which gives a total cost of about $12 billion for provision of full coverage of rural roads in Nigeria.

Assuming that this road system will be constructed with labor-intensive methods, the share of wages of the total cost would be about 50 percent, as for instance was the case in the Kenyan Rural Access Roads Program, which was the first large-scale labor-intensive road construction program in Africa (de Veen, 1980). Thus, about $6 billion would accrue directly to the laborers. Assuming an average propensity to consume cereals of 0.5 (on the low side), cost of cereals would be $3 billion approximately which would yield about 20 million tons (assuming a price of $150 per ton). Thus, the construction of a full coverage of rural roads in Nigeria would require about 20 million tons of cereals.

If this investment were spread over a 20-year period, it would involve an annual investment of $600 million per year, and 1 million tons of incremental cereals consumption.

If we now make a very simple extrapolation to the total of the MADIA countries by multiplying the proportion which Nigeria represents of the population of the MADIA countries, we arrive at estimates of $1 billion per year and 1.67 million tons of incremental cereal consumption (Nigeria is included in this group). If we make a further extrapolation to all of Sub-Saharan Africa in a similar manner by multiplying by the proportion which Nigeria represents of the population of Sub-Saharan Africa, we arrive at estimates of $2.5 billion per year and 4 million tons of cereals. That would represent a substantial under-estimate of the total cost—because the rest of Sub-Saharan Africa averages out to somewhat lower population densities, and therefore there would be a somewhat higher cost per family reached by rural infrastructure. Nevertheless, we can see clearly that we are dealing with very large magnitudes. The current total volume of cereal food aid to Sub-Saharan Africa is nearly 4 million tons per year. In the short run, much of that food aid would continue to be used for famine relief, balance of payments support, and similar uses, but as rural development gathers momentum, the need for these forms of food aid would gradually diminish. Nevertheless, for several years at least a doubling of food would probably be necessary to meet both the needs of famine relief and balance of payments support as well as for the construction of rural infrastructure.

There are two major practical problems in using food aid for rural infrastructure investment. First, in general, roads built largely with food aid do have a large employment content, but inadequate resources are devoted to the provision of other goods and services to make the road durable and worthwhile. Not enough is spent on grading, on culverts, and on hard surfaces in high-rainfall areas. As a result, the roads are inadequate when completed. They are not considered to be worth maintaining and hence deteriorate very rapidly. The issue is the lack of sufficient financial resources to allow purchase of necessary equipment and skills. Thus aid donors need to merge their food aid policy with their financial aid policy so that food makes up an adequate proportion of the infrastructure investment, but that the other components are also provided.

This calls for coordination which does not currently exist between the World Food Programme and the World Bank, and between the food aid and other aid elements of bilateral programs. To put it succinctly, one needs to start with the development project, rural infrastructure, calculate how that is best built, find the proportions of various inputs including labor, and then calculate the food component of the labor component. The labor then may be hired for a wage, and the wages obtained by sales of food if the markets are working adequately. One may also choose to do direct payments in the form of food if the contingencies of the foreign assistance system require that.

Second, and as difficult to solve as the problem of coordinating donor assistance, is to develop the national institutional structure for building and maintaining roads. Maintenance is now so inadequate that it makes no sense to build new roads until the institutional structures for maintenance are built. It is difficult to institute massive coverage of the rural areas with infrastructure unless one

has a decentralized administrative system. Decentralization is necessary for building the roads so that one can ascertain the right location for them and see that they are built properly. Decentralization is even more essential for maintenance. The Nigeria chapter in the MADIA working paper (1989) estimates that annual maintenance costs are 20 percent of the initial construction cost. Other studies put these costs as low as 10 percent, but even so there is a massive investment requirement. In Nigeria, for example, the total investment for a rural road system is $12 billion, which means, using the MADIA proportions, that the annual maintenance cost is $2 to $4 billion. How can that be obtained without local government to raise taxes for that purpose and to see that they are spent properly? Of course, this problem is less complex for a small country like Malawi—but even then, reorienting the political and administrative system to provide a rural orientation would not be easy.

Thus we have a complex sequence. Rural development on a large scale requires rural infrastructure. Rural infrastructure requires a decentralization of the political system. If foreign assistance is to play an important role, it must, as macro policies become more appropriate, switch its policy conditioning toward the difficult direction of decentralizing political and administrative structures for the purpose of broad participation in rural development.

These are difficult processes, but one must ask what is the purpose of the major changes in macro policy which have been brought about and which have been justified on the basis of the need for more labor-intensive nonagricultural investment and a greater emphasis on agriculture, if one does not provide the basic public services necessary for broad participation in agricultural growth.

One could make a similar case for rural education projects as has been made for infrastructure. Again, food aid could play an important role in building the physical structure of schools which is also a relatively labor-intensive endeavor. Similarly, one of the most important costs of school attendance in very poor societies is the value of the child's labor. Very poor people have to mobilize everybody's resources in order to generate enough income when the labor is used at such extraordinarily low levels of productivity. This stands in the way of school attendance. School lunch programs, supported by food aid, can play an important role in increasing the immediate returns to school attendance.

A massive effort of school building and school lunches would also require a high degree of decentralization in the same manner as road construction. Thus we face the same kinds of problems as for infrastructure.

Poverty Numbers

If we define an absolute poverty line as FAO does, as sufficient energy to provide 1.4 times the energy required for the basic metabolic rate, then 20 percent of the people in the world below that line are projected in 1990 to be in Sub-Saharan Africa (Mellor, 1988). That is about 150 million people or 28 percent of the 1990 population of Sub-Saharan Africa. Of those "hungry poor," in Africa 90 percent are in rural areas. We would expect similar proportions in the MADIA countries.

The proportion of the rural population in absolute poverty in the MADIA countries was estimated (Cameroon, 40 percent; Kenya, 40 percent; Malawi, 75 percent; Nigeria, 40 percent; Senegal, 50 percent; and Tanzania, 50 percent). However, they appear excessively high and therefore they have been reduced by half to be more nearly comparable to Asia—where per capita incomes are low. Using population estimates for mid-1986, there are an estimated 37.2 million hungry poor in the MADIA countries (Cameroon, 2.1 million; Kenya, 4.3 million; Malawi, 2.8 million; Nigeria, 20.6 million; Senegal, 1.7 million; and Tanzania, 5.9 million).

Assuming that a supplement of 25 percent of recommended daily allowance would be needed to pull this group of hungry poor above the poverty line, about 2.1 million tons of cereals would be required per year for these MADIA countries as a group. Earlier it had been shown that about 1.67 million tons of cereals would be needed for the purposes of rural infrastructure construction. Thus, a rural works program of the magnitude delineated would take care of 80 percent of the poverty requirement. An additional 0.43 million tons of cereal food aid, properly distributed, would take care of the rest.

Thus, a rural public works program operating at the level previously delineated in the MADIA countries would serve the following poverty-oriented functions. First, it would lift 80 percent of the rural people falling below the poverty line up to that poverty line in the short run through the works themselves, and stimulate a growth process that would keep them above that line. Note that in Bangladesh, the 40 percent reduction in poverty with all-weather rural roads (Ahmed and Hossain, 1987). Second, it would provide a rural infrastructure which would allow the totality of the rural areas to participate in the growth process. Third, it would provide an early warning system of approaching hunger stress (Ezekiel and Stuyt, 1989). Fourth, it would provide a continuing administrative structure for providing increased supplies of food in the rural areas in periods of stress. Note that the biggest problem in famine prevention is the need to rapidly develop structures for moving food into rural areas. The Maharastra Rural Employment Scheme provides an example of how this can work (Ezekiel and Stuyt, 1988).

Since there has been particularly large experience with massive rural employment projects in Asia, it is desirable to point out some of the specific differences in the African situation. First, there tends not to be only seasonally surplus labor in agriculture in Africa, even though the average productivity of that labor is lower than in Asia (Mellor and Ranade, 1988). This has two implications. First, a somewhat higher wage will have to be paid in Africa than in Asia; and second, there may be either a decline in agricultural production when employment is provided in road construction requiring in a sense even more food aid than would otherwise be needed, or alternatively the construction must be on a clearly seasonal basis.

Policy Conclusions

Food aid in the MADIA countries is not a major element in stabilization and food security, project development, food supplies, and foreign assistance flows. It could productively fill those roles.

The MADIA countries are grossly underinvesting in the rural sector generally, in rural infrastructure, and more widely in labor using, and hence food consuming, activities. There is a distortion of the economies away from employment and food consumption.

If food aid is to play a large role, the following changes need to occur.

For the MADIA countries:

(1) Continued effort to decentralize the political and administrative processes of revenue collection and expenditure into rural areas (other MADIA work delineates the variability among countries and the specific needs);

(2) Expenditure on rural infrastructure and of course the complementary central infrastructure on a massive scale;

(3) Recognition that rural infrastructure does not provide growth without a complex set of technologically oriented institutions. Expenditure patterns have to be completely reoriented per the MADIA findings.

For the donors, there must be:

(1) Successful coordination of food aid and financing for the nonfood components essential to productive projects;

(2) Aid conditioning on the sub-sectoral, political, and administrative changes needed to build and obtain returns from massive infrastructure investment;

(3) Provision of greatly expanded project-oriented technical assistance to make food and labor-intensive projects work;

(4) Programming has to be managed to stabilize food availability not to destabilize it; or, develop the IMF cereal facility as a viable means of meeting developing country needs by stabilizing food supplies through international borrowing (Adams, 1983).

With these changes, food aid at some substantial multiple of current levels could be utilized to effectively accelerate growth and broaden participation in that growth.

Notes

1. Based on conceptualization and calculations by Hannan Ezekiel, International Food Policy Research Institute.

2. This was carried out in an excellent study by Gaviria, Bindlish, and Lele.

3. Those were estimated from information in the *Road Development Plan for India*, 1981-2001.

4. This is simply derived by multiplying the target density of the region by the area of the region.

5. The unit costs of rehabilitation and construction have also been taken from the study by Gaviria, Bindlish, and Lele.

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SYNTHESIS:
AID TO AFRICAN AGRICULTURE – LESSONS FROM TWO DECADES OF DONOR EXPERIENCE

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A Conceptual Framework for Assessing the Effectiveness of Donor Assistance to the MADIA Countries[1]

The Introduction stressed the crucial role of agriculture in the early stages of development and the importance of raising the productivity of a large number of small farmers for ensuring *breadth* in the growth process and generating economy-wide linkages. Not only is smallholder development necessary to spur growth in the rest of the economy, but as we have shown, without such growth in agriculture, import-substituting strategies such as those pursued by Nigeria, Tanzania, and Senegal come to a halt as demand for food and other wage goods increases due to urbanization, without a commensurate increase in supply. Even a rapid increase in food imports cannot sustain such a strategy in the absence of growth in exports needed to finance these, and agriculture constitutes the engine of export growth in most African countries.

Given the heavy requirements of human and organizational capabilities for successful smallholder development, the Introduction emphasized the need for a *balanced* accumulation of physical, human, institutional, and technological capital for ensuring broad-based growth. Both the financial resources needed for the accumulation of such capital and the necessary attention of policymakers to establishing key priorities for long-term development have been hard to muster in recent years due to macroeconomic difficulties. While these challenges have centered attention on the restoration of macroeconomic balance, they have also accentuated the need to learn lessons from the record of donor and government actions in the past in terms of their effect on the processes of broad-based capital accumulation, and their effects, in turn, on sectoral growth.

Whereas the primary engine of robust growth is the private initiative of a large number of individual decision-makers, the Introduction highlighted the critical role of public expenditures on agricultural research, extension, transport, and human resource development in determining the rate of capital accumulation during the early stages of development. Furthermore, we outlined the bases for determining the *quality* of public expenditures and the appropriate *sequencing* and *phasing* of investments. It is therefore possible to conclude that, over nearly two decades now, some countries in the MADIA sample have been more successful than others in building on their initial endowments to achieve a more balanced accumulation of capital from the viewpoint of broad-based, long-term growth.

Criteria for expenditure quality also need to be applied to external assistance. As we have shown, donor assistance to Africa rose rapidly during the 1970s and has constituted a very large share of government expenditures in all of the MADIA countries but Nigeria—reaching, for instance, 63 percent in the case of Senegal (in 1981) and 54 percent in Malawi (in 1979). Not surprisingly, donor influences have been crucial in shaping the rate of capital accumulation as well as its balance, and thus in determining the source and breadth of productivity growth in the MADIA countries.

Recipient concerns about policy reforms, conditionality, and the loss of national sovereignty often overlook the fact that individual donors played a major role in influencing the *strategic investment choices* made by recipients in the 1970s, although some played a more overt role than others. The World Bank, for example, has played an explicit role in providing policy analysis and advice for a considerable period. The bilateral agencies, for their part, have played an implicit but nonetheless important role in that their investments have, for example, influenced the relative allocations to agroprocessing, large-scale industry, transport, agriculture, or social service sectors. Within the agricultural and rural sectors, donor assistance has influenced the relative priority accorded to food crop and export crop production, low and high potential regions, growth and equity objectives, support for parastatals and promotion of private initiatives, and, more generally, short-term physical results and long-term capacity building. Indeed, the substantial public sector expansion in countries such as Tanzania and Senegal in the 1970s would not have been possible without the active and generous support of donors. These strategic choices have in turn determined the extent to which these large inflows of external assistance caused "Dutch disease"[2] effects as against contributing to the growth of the traded goods sectors,[3] which remains a relatively unexplored subject.

The limited capabilities of recipients to formulate and implement development strategies has meant that external perceptions of development priorities—together with the expectations of the different constituencies supporting different donors and the various institutional, procedural, and resource-base limitations to effective aid programming—have determined the level and content of donor assistance as well as explicit or implicit policy advice. These operational constraints have led to the financing of a shopping list of many marginal projects—regardless of their fiscal and administrative feasibility—and the postponement of macroeconomic adjustment. The *real* value of the resources transferred to recipients has thus been greatly overstated. External shocks of the 1970s and the early 1980s have, however, necessitated hard choices and have finally brought the spotlight on the long overdue need to establish internal capacity for sound economic management and a feasible long-term development strategy.

In keeping with this conceptual framework, our assessment of the overall experience of donors—their successes and failures—in the MADIA countries is divided broadly into two parts:[4] The next section examines the extent to which donors have helped recipients to develop balanced, long-term strategies for broad-based agricultural development within the context of political and institutional constraints peculiar to each country, and to choose and undertake the necessary strategic investments as well as the extent to which donors' own changing perceptions have influenced this process. The third section discusses the constraints that donor constituencies, resource bases, and various institutional factors have imposed on the nature and effectiveness of donor assistance.

In the last section we briefly tie together the broad lessons of donor experience and make recommendations for the design of future agricultural development strategies in Africa.

The Role of Donors in Assuring Balanced, Long-Term Agricultural Strategies

Promoting a Smallholder, Agriculture-Led Strategy for Overall Growth

An important contribution of donor efforts in the agricultural and rural sectors during the 1970s has been that by and large, they helped to enshrine the smallholder-based agricultural development strategy as an important means for achieving overall economic growth—even in circumstances where the actual African government commitment to this cause was weak at best, and regardless of the many shortcomings of their own interventions. Yet these efforts—however well-intentioned and individually successful in many cases—have not been conceived in terms of the broader vision of long-term development that we have outlined.

Ample examples exist of how donor assistance can act as both a catalyst and a protector of smallholder development: the promotion of smallholder export agriculture by the United Kingdom (tea and coffee in Kenya, tobacco in Malawi) and France (cotton in Cameroon and Senegal); the establishment of an entire agricultural development strategy in Nigeria by the World Bank; Sweden's and Denmark's assistance with soil conservation and dairying, respectively, in Kenya; Germany's with the development of maize in Senegal; and the role of the European Community's STABEX assistance in stabilizing the revenues of groundnut producers in Senegal. Similarly, the contributions of the United States in developing agricultural colleges and universities in these countries exemplify donor attempts to develop longer-term human and institutional capital in the agricultural sector.

Yet neither the donors' project-by-project approach of the 1970s, nor their concern for policy reform in the 1980s to date has helped African governments face the inescapable hard work of constructing long-term, country-specific development strategies that can withstand the requirements of everyday macroeconomic management in the face of an ever-changing external environment.[5] Donors have not devoted much attention to the sequencing and phasing of investments or appreciated the need for selectivity. They have not given priority to those investments—for example, investments to develop human, institutional, and technological capital—that are critical to the process of modernizing traditional agriculture. These imbalances have been reinforced by African governments' weakness in effectively articulating their strategies, and by their preference of maximizing resource flows in the short run rather than methodically pursuing the long-term development of internal absorptive capacity.

It is difficult, therefore, to find much connection between where donor assistance has gone and where growth has occurred in the MADIA countries:

- In Malawi, for example, while donors concentrated on smallholders, growth occurred in the estate sector—due to the discriminatory policies pursed by the government (favoring the estate sector) and the fungibility of donor assistance, which the government channeled into large-scale agriculture.
- In Senegal, despite massive donor assistance, and in Nigeria, despite the oil boom and World Bank commitments of nearly $1.7 billion, there was little growth in the agricultural sectors except for irrigated rice, maize, and horticultural crops—all of which constitute minor subsectors in terms of area planted, value added, or employment generated.
- In Tanzania, while donors supported agroprocessing and food crop production (mainly via integrated rural development projects), the export crop sector declined and food production both stagnated and moved increasingly into the parallel market.
- Even in Cameroon and in Kenya—countries that performed relatively well—donor interventions in the sectors that were successful constituted but a small part of the total assistance provided. In Cameroon, it is difficult to attribute the growth in the agricultural sector to donors except in the case of investments in cotton and rice in the North—which were undertaken mostly as an attempt to improve income distribution. In both Cameroon and Senegal, moreover, the economic viability of the irrigated rice schemes financed by donors has been questioned by the donors themselves, yet this has not affected their continued financing of these schemes.
- In Kenya, where a substantial proportion of donor assistance went to marginal areas, much of the growth achieved was accounted for by high value activities such as tea and coffee production and dairying in areas of high agricultural potential. In fact, among the MADIA countries, only the smallholder export crop expansion in Kenya can be considered as having become truly self-sustaining in a financial, institutional, and human capital sense. The Commonwealth Development Corporation and the World Bank played an important role in institutional strengthening in the case of the Kenya Tea Development Authority, and the World Bank also helped establish processing capacity for tea as well as services for coffee. Yet the Bank's advice to Kenya and its lending policies toward the development of these crops have reflected a continuing export pessimism and have been inconsistent with the Bank's project activities and their subsequent outcomes—an issue discussed below. Kenya's strong internal political support (lacking in many other African countries) for export agriculture itself provided the impetus for the rapid growth of smallholder tea and coffee.

At the micro level, the absence of a long-term framework for promoting smallholder agriculture and a declining appreciation within the donor community of the importance of technical know-how and expertise have contributed to the inadequate grasp of complex, location-specific factors. This problem has been accentuated by the inadequate internal capacity of African governments; they have not made adequate use of the limited, but growing, supply of trained nationals, preferring instead to rely on large numbers of expatriate technical assistance personnel, as we show below.

The donor studies in this book have repeatedly drawn attention to the lack of understanding on the part of expatriate personnel of the complex farming systems evolved by African farmers, and of the crop- and location-specific constraints on smallholder intensification and

efficient utilization of the available (but rapidly declining) extensive margin. These problems appear to have been particularly critical in the widespread failure of extension projects. For example, the efforts of both Germany and the World Bank to spread innovations (for instance, hybrid maize) in Malawi stalled because of inadequate knowledge of consumer preferences, problems of storability, and the limited risk-taking ability and access to credit of a large number of farmers operating below subsistence level. Similarly, USAID's extension activities in Senegal, Cameroon, Tanzania, and Nigeria had a limited impact, as they were premised on an imperfect knowledge of the socioeconomic constraints facing small farmers. In Cameroon, the Dutch disease effects of the oil boom, on the other hand, contributed to an increase in nonfarm labor demand—and through labor shortages in the agricultural sector—led to the poor performance of virtually all World Bank projects in the forest areas of South and East Cameroon.[6] But the effects of such macroeconomic policies on agriculture, too, were poorly understood.

The recent emphasis on macropolicy reforms and the correction of price signals is encouraging some labor to return to the agricultural sector. Combined with the rise in export crop prices through exchange rate adjustments and the reduction of taxes, this is leading to some supply response in the agricultural sector in the short run. The ability to sustain this response, will, however, remain constrained by the myriad sectoral policy, institutional, and micro-level constraints that only Africans can address.

Assuring Balance Among Strategic Investment Choices

The absence of a long-term vision of agricultural development has also contributed, if inadvertently, to a perception of the different strategic choices available in recipient countries as "alternatives" rather than as complementary elements of a balanced strategy. We illustrate this below by providing examples of donors' shifting emphases between the achievement of shorter-term physical results and the strengthening of long-term absorptive capacity, and, within agriculture, between the promotion of food crops and export crops, between focus on regions of high and low agricultural potential, between growth and equity objectives, and between support for parastatals and promotion of private initiatives.

Recent trends suggest that a donor consensus on some of these issues is beginning to be established. For example, Sweden and Denmark have reduced their tolerance of burgeoning and inefficient public sectors. Similarly, the United States, which has been at the forefront of policy reform initiatives, may have begun to moderate its views about the speed with which privatization can proceed given the outcomes of initial reform efforts.

Short-term gains and long-term capacity building. The emerging donor consensus now allows real possibilities for the establishment of successful long-term strategies on a country-by-country basis. Donor support could be mobilized around these strategies to undertake complex interventions in support of capital accumulation at the sectoral, subsectoral, and micro level in countries that offer a conducive policy environment. The formulation of such strategies in turn requires the development of effective analytical and policymaking capacity at the national and sectoral levels both inside and outside the recipient governments—along with far more informed public debate within each country on the real causes and consequences of government actions and donor policies (although the situation has varied considerably among countries).[7]

That the development of recipient capacity can assure the success of donor interventions has already been evidenced in Latin America and Asia. Capacity building can, thus, elegantly resolve a major dilemma that donors currently face: on the one hand, being held increasingly accountable by domestic constituencies that demand positive results in exchange for their continued support, and, on the other, being viewed as threatening recipient sovereignty when they intervene to ensure policy reforms (without which their projects are, in any case, likely to perform poorly).

The experience of the MADIA countries shows that donors, instead of embracing a broad and long-term approach for developing internal capacity, have leaned toward the achievement of visible and immediate results by investing large sums in physical and social infrastructure as an easy means of ensuring accountability to their internal constituencies. Even in cases involving a fairly long-term donor commitment, such investments in infrastructure, while essential for laying the foundations of growth, have not been conceived in the context of a *viable* long-term strategy. The lack of accompanying investments in human, institutional, technical, and informational capital has precluded adequate utilization and maintenance of the infrastructure put in place. Most important, the institutional responsibility for operation and maintenance has not been delegated to the local governments and grassroots organizations that benefit from these services. National governments, threatened by the possibility of genuine democratization, have time and again increased central control, and donors have inadvertently supported these actions.

Investments in basic infrastructure, particularly in transportation networks, comprised nearly 35 percent of total German assistance to the six countries during the period 1962-86; more than 29 percent of total World Bank assistance to these countries during 1965-88; and 32 percent of total European Community "project aid" to Tanzania, Cameroon, and Senegal during 1958-85.[8] The development of transport networks no doubt plays a crucial role in broadening factor and product markets, diffusion of new technologies, increasing input, and other respects. But strategies of transport development in the MADIA countries have paid more attention to trunk routes[9] than to the maintenance of existing rural feeder roads or the construction of new ones. Moreover, the absence of institutional capacity at local levels and the shortages of recurrent funds have plagued the regular maintenance of existing and newly constructed feeder roads in some countries—for example, Tanzania and Nigeria.

Sweden, Denmark, and the World Bank similarly provided substantial assistance to Tanzania and Kenya for investments in social infrastructure. The shares of water supply, health, and education sectors together accounted for 52 percent and 29 percent of SIDA's total assistance to Kenya and Tanzania, respectively, until 1984; and for 27 percent of DANIDA's total assistance to Tanzania over 1962-84. These investments helped shape the sectoral strategies of recipient countries—as, for instance, in the case of Tanzania, where the water supply program was expected to achieve universal coverage by 1990 with the help of SIDA and other donors. As Marian Radetzki has pointed out in his study of Swedish assistance, fiscal infeasibility, technological inappropriateness and inadequate decentralization turned out

to be the main barriers to these ambitious plans. By 1984, after 13 years of implementation, only 12 percent of the rural population in Tanzania had access to reliable drinking water.

Furthermore, by contributing to the growth of the nontraded goods sectors in countries such as Tanzania and to a lesser extent Senegal, excessive donor assistance during the latter half of the 1970s led to a Dutch disease syndrome. In Tanzania, for example, external assistance fueled large increases in public consumption levels (in part accounted for by the rapid rise in public sector employment as well as expenditures on social services) that in turn exerted upward pressure on both inflation and the exchange rate. The distributional consequences of this "aid boom" was to benefit net consumers of tradable goods (the prices of which fell relative to nontradables) at the expense of net producers.[10] Since the rationed allocation of imported consumer goods favored urban areas (especially Dar es Salaam) and the only producers of tradables were farmers in the export crop sector, this amounted to a redistribution of resources from these farmers to urban households. The production of tradables suffered in the absence of efforts by either the government or donors to rectify the policy biases against export agriculture (as we discuss below). More generally, the large influx of donor assistance enabled the government to make strategic choices—such as to reembark on its costly and counterproductive Basic Industries Strategy[11] that had been briefly abandoned following the first oil crisis—that proved politically difficult to reverse.

In contrast to the donor penchant for relatively short-term interventions for relieving the more visible shortages of physical and social capital, the successful cases of smallholder development in the MADIA countries—for example, tea and coffee in Kenya and cotton in francophone Africa—have involved complex packages of public policy measures (*including* the development of rural infrastructure) as well as long gestation lags. In Kenya, the development of tea and coffee involved the provision of sustained field-level technical services over nearly a decade and a half.[12] The development of cotton in francophone West Africa has involved a similar time span and has depended on long-term technical assistance of high quality.

Other notable examples of smallholder development have also involved long periods of high quality commitment by donors (although not necessarily a large *volume* of assistance as in the case of high profile infrastructure projects), including the development of *sustainable* human, institutional, and technical capacity at the micro level. John Howell, for instance, has described in his study on the United Kingdom's development assistance how the extended involvement of the Cotton Research Corporation (CRC)—for more than 50 years in Malawi and nearly 40 years in Tanzania—was instrumental in earlier cotton development and research in these countries. The successful training of Malawians by the British helped preserve these capabilities after the withdrawal of the CRC. In contrast, the insufficient training of nationals and a combination of poor policies and weaker government commitment in Tanzania in the 1970s led to the erosion of the substantial earlier gains. Short-term support in the case of the United Kingdom's maize agronomy projects in Kenya and Malawi, and its potato research project in Kenya, in turn prevented the establishment of programs and institutions capable of sustaining themselves without external financial and technical support. Similarly, erratic funding and shifting priorities in USAID's maize breeding activities considerably reduced the effectiveness of its support to the otherwise successful maize program at Kitale in Kenya.

It is clear, therefore, that the greatest impact has been made by the longest supported measures, with the help of on-site experts who, due to their long-term field presence, have developed a profound technical grasp of the contextual issues and, most important, have helped institutionalize these efforts. This experience underscores the importance of detailed knowledge based on grassroots experience—rather than the sheer volume of assistance alone—as a source of well planned and well executed development programs. In addition to the commitment of such high quality technical assistance, which helps develop local micro-level capacity for nurturing new technologies and institutions to maturity, these efforts have also always involved a high degree of rapport with nationals.

Parenthetically, it needs to be mentioned that one important consequence of the association of long gestation lags with successful smallholder development[13] has been the short-circuiting of this process by some governments—for example, those of Malawi and Nigeria—which have promoted large-scale farming in their efforts to secure a quick, near-term payoff. As stated earlier, donor resources—while targeted mostly at smallholders—have, due to their fungibility, unwittingly furthered these aims.

On a broader level, an analytical perspective on long-term agricultural development is very demanding of human and organizational capital and can be realistically deployed on the necessary scale only by developing recipient capacity for effective research, analysis, and policymaking. In Africa, however, the pressures to modernize and to cope with a rapid succession of domestic and external crises have been immense. The efforts of African governments to build national institutions that could provide a steady flow of highly qualified economic researchers, analysts, and managers, as a result have been few and far between. Nor have governments made active attempts to foster an intellectual climate conducive to the genesis of arms-length organizations that could provide objective policy research and advice. Furthermore, governments of small African countries have been less vocal in demanding high quality donor assistance for long-term training of nationals, and less successful in choosing from the array of donor assistance and advice of varying quality than, say, their larger Asian counterparts, such as India, China, or Indonesia. The weak technocracies in Africa have not adequately represented the larger government and political interests or articulated them in cohesive macroeconomic and sectoral policies that directly address developmental concerns.

Donors, in turn, also have not done much either to strengthen the weak analytical and policymaking capabilities at the macroeconomic and sectoral level, or to institutionalize macroeconomic and sectoral policy research. The United States, however, has played an important role. While characterized by greater instability than that of other bilateral donors and reflecting the dominance of strategic interests, U.S. assistance has nevertheless played a very important role in building policy planning and research capacity in Asia and Latin America.[14] In the MADIA countries, USAID has spent a quarter of all assistance to agriculture and rural development (which comprises some 60 percent of total USAID assistance[15]) on agricultural education and training. It has sought to strengthen indigenous capabilities over the long run by promoting institutions for higher education in Nigeria, Kenya, Malawi, and Tanzania. In addition, the Agricultural Management and

Planning projects in Senegal and Cameroon are good examples of a donor attempt to strengthen the local base for policy research and analysis. As Bruce Johnston, Allan Hoben, and William Jaeger have noted in their study, these activities comprise an important link in the sequence of public investments needed to modernize agriculture, but the direct impact of USAID's institution building efforts on agricultural development is not easily assessed. For example, the sporadic nature of U.S. assistance to agricultural colleges in East Africa adversely affected its effectiveness, as pointed out by the authors. In Nigeria, on the other hand, inadequate governmental support (in addition to the civil war and the ensuing political instability) crippled the functioning of the various faculties of agriculture and veterinary medicine that USAID supported. Moreover, USAID's institution building efforts were mainly confined to the agricultural sector (instead of creating policy planning capacity more generally as had been the case earlier in Asia and Latin America),[16] and they were withdrawn in 1976, after the oil boom and Nigeria's accession to the Organization of Petroleum Exporting Countries.

Until very recently, the World Bank, in contrast, has done little to support local research and analytical capabilities by promoting institutions of learning or the work of individual local researchers. This is in part a consequence of the weak internal demand for capacity building in Africa, but it also reflects an inadequate appreciation of this need within the World Bank itself. Thus while the Bank recognized the weak analytical capacity for policy formulation in the Kenyan Ministry of Agriculture in the 1970s, its assistance did not address these concerns adequately. It chose to undertake its own projects through expatriate technical assistance rather than to persuade the Kenyan government to better utilize the substantial national expertise that was by then available.[17]

The World Bank has now undertaken a major new initiative for developing capacity in Africa through establishing centers of excellence. Unfortunately, these efforts are still narrowly conceived in terms of improving macroeconomic policy, which is only the tip of the iceberg. The Bank's efforts need to be actively complemented by similar efforts in all major sectors that contribute to the macroeconomic imbalance, and whose reliance on external technical assistance in recent years has increased (as we have documented in our study on World Bank assistance).

The availability of detailed sectoral and subsectoral data is critical to undertaking well documented analytical work that is strongly grounded in the realities of smallholder agriculture. The MADIA study in general has highlighted, in addition to the profound shortage of trained African personnel at the macroeconomic level, the paucity of reliable and timely data on such essential micro-level matters as the area, yields, and production of crops by region—a problem that has consistently plagued agricultural planning in Africa.

The number of educated and trained African nationals has increased significantly, albeit from a very weak initial base. Due to inadequate development of human and institutional capacity at the sectoral and national levels, the training of nationals has occurred mostly as a result of on-the-job learning by doing. In the face of high population growth rates and progressive degradation of the natural resource base—documented extensively in the MADIA study[18]—it is not clear how the stagnation of agriculture can be addressed unless both governments and donors give the highest priority to achieving a balance in the deployment of human and physical capital in order to develop and sustain long-term capacity. Documents such as the Lagos Plan[19] do emphasize this important need, but it has not yet been effectively articulated in the assistance sought by governments.

Export crops and food crops. Donor assistance has gone through cycles of support for *either* food security *or* export crop development—instead of pursuing a consistent and balanced approach to *both* food and export crops.

Beginning in the early 1970s, most donors who had promoted export crop agriculture in the 1960s shifted their investment emphasis and policy attention toward food crops. The reasons for this shift are more numerous, complex, and interactive than is usually recognized. First, their concerns about food security and poverty alleviation in Africa intensified sharply in the aftermath of the world food crisis. Second, the export pessimism permeating intellectual circles at the time led donors to support and encourage taxation of export crops as a way of pressing diversification out of traditional export crops such as tea, coffee, groundnuts, and sisal, into new activities—as we documented in the case of the World Bank's advice to African countries. Third, donors faced a dilemma in balancing the interests of individual exporting countries with those of the primary commodity producers at large. In the case of tea, for example, the World Bank adopted in 1973 a policy of financing only rehabilitation of existing productive capacity instead of expansion of acreage (except when the tea producing countries had no alternatives) due to perceived conflicts among its various borrowers (e.g., India and Sri Lanka vis-a-vis East African countries). Because of long-term demand that was considered price and income inelastic and was concentrated in the industrial countries, as well as due to an observed decline in international prices in real terms, an increase in aggregate production was likely to cause a fall in the incomes of individual producers. Similar *de facto* guidelines applied to the financing of coffee production. Since 1982, more overt restrictions have applied to World Bank lending for coffee and cocoa. The European Community has similarly shown reluctance to finance crops whose fluctuations in export earnings have triggered STABEX assistance. Despite the secular decline in terms of trade, however, an unpredicted "beverage boom" *was* experienced in the latter half of the 1970s. Fourth, the competing interests of developing countries have been paralleled by those of donor countries in the cases of several other primary commodities—making the argument apply more broadly. The United States, for example, has refrained from financing research in countries producing commodities whose export to third parties might compete with U.S. exports of the same commodities. From time to time, producers in industrial countries have also put pressure on the World Bank to restrict lending to developing countries for commodities[20] such as palm oil, soybean oil, tobacco, citrus fruits, and sugar whose production competes with their own.

African governments in their turn faced a paramount concern for food security on the part of their newly independent constituents—a concern that they felt had been ignored by the colonial powers earlier. Second, they hoped to diversify out of colonial modes of production and modernize through industrialization. Tanzania, for example, which shared and articulated these concerns most effectively, moved into processing of its traditional agricultural exports and import-substituting industries. The government discouraged—in a variety of ways—the involvement of

individual farmers in high value export crops and, as Howell has pointed out, rejected the Commonwealth Development Corporation's smallholder crop authority model which had proved highly successful in Kenya.

The net result of these numerous factors, as we showed in the Introduction, has been that the MADIA countries have lost world market shares in major export crops (with the exceptions of tea and coffee in Kenya and tobacco in Malawi) to other developing and developed countries. Senegal's share in world exports of groundnuts (oil equivalent), for example, fell from an average of 27.8 percent in 1969-71 to 12.1 percent by 1986—while the U.S. share increased from 5.7 percent to 21.0 percent over the same period. Nigeria's share in world palm oil exports fell from 22.9 percent over 1961-63 to 0.6 percent in 1971-73—while Malaysia's increased from 17.7 percent to 49.8 percent. In the 1980s, there has been some return of emphasis back toward export crop production. Howell has documented this in the case of the United Kingdom's program in Tanzania, where the government finally agreed to correct the policy distortions that afflicted the export crop sector. While World Bank support for food crops in Nigeria continued into the 1980s, there has been a renewed interest in promoting export crops.

We pointed out in the Introduction that the distinction between area expansion and rehabilitation made in donor policy toward export crop farming has, in retrospect, turned out to be arbitrary since much of the actual increase in smallholder export crop production in Africa has come from area expansion, even though it was intended to come from productivity increases.[21] Labor availability and the lack of farm services have been the most constraining factors to intensification, and it has been more profitable at the margin for farmers to increase acreage than to intensify existing production. Donor investments in processing facilities and in the rehabilitation of existing acreages have also served to actively encourage the expansion of acreage by providing a market stimulus that would not otherwise have existed. In such circumstances, therefore, it might be better to provide the poorest countries, which have few alternative sources of growth and lack access to nonofficial external capital, with the requisite assistance to increase production. Such increases are unlikely to have more than a marginal impact on the aggregate picture. Moreover, since the growth in world consumption of commodities like tea, cotton, edible oil, and sugar derives largely from developing countries, it is no longer true that continued increases in the production of these commodities will only benefit consumers in developed countries. Since consumers and producers of primary commodities are spread throughout the world, a policy that promotes true competition instead of arbitrarily protecting select groups of existing consumers or producers is in fact the only policy that is consistent with the recently renewed donor emphasis on the concepts of competition, efficiency, and equal opportunity.

The experience with food crop production clearly shows that many African governments have ignored the production of their traditional food crops—for example, sorghum, millet, cassava, and yams—produced and consumed by a large majority of their citizens. Instead, they have favored the high cost production of import-substituting rice and wheat to meet rapidly growing demand in the urban sector; indeed, rice has been the fastest growing crop in the MADIA countries. France and the European Community, for example, assisted the Senegalese government in diversifying the economy out of groundnuts, the traditional export and mainstay of its economy, into the uneconomical production of irrigation-based rice (in addition to confectionary groundnuts, groundnut oil, cotton, and vegetables). The World Bank did the same in Cameroon in the 1970s, but later changed its position.

In general, the shift of donor investments in extension, input supply, and rural infrastructure toward food crops—often in areas of low productive potential and high transportation cost—reflected poor sequencing and phasing. While they were understandable on the grounds of improving regional income distribution, these large investments proved difficult to sustain in the absence of both an established research and technological base (with the notable exception of hybrid maize) and insufficient levels of human and institutional capacity. In the literature commissioned by the donors themselves, these factors had already been identified as the most important constraints on smallholder growth.[22] Yet this literature had very little impact on donor behavior. Agricultural research, for example, accounted for a very small share of donor assistance to the MADIA countries in the 1970s, and much of it tended to be of a quick, adaptive nature in the context of rural development projects. In general, donor efforts have not addressed the need for a systematic build-up of local capacity for research and technology to solve the more fundamental farm-level constraints posed by soil degradation, the slow growth of fertilizer use, and declining fallow periods. Furthermore, as discussed in the Introduction, donor efforts—including those of the Consultative Group on International Agricultural Research—have been largely supply-driven, given the weak internal demand in African countries for developing effective research capability.

The countries that relied on their comparative advantage and moved least rapidly to diversify their economies performed well—and, ironically, achieved rapid diversification. For example, despite donor warnings of poor export prospects in the 1970s, Kenya continued to press on to expand its traditional tea and coffee exports (which together account for 50-60 percent of its total export earnings). Considerable strides were also made in the production of (improved) maize and horticultural crops. Moreover, Kenya further broadened employment opportunities by successfully developing decentralized, small-scale industry. In contrast, the costly and complex diversification strategies attempted by Tanzania and Senegal ignored the sequencing and phasing of the strategic investments necessary for broad-based growth by undermining agriculture in favor of capital-intensive, import-substituting industrialization. These countries performed poorly in *both* food and export crops.[23] Furthermore, the development of large-scale public sector industries—such as Tanzania's fertilizer and pulp and paper industries, made possible by the active support of donors—created far fewer income-earning opportunities. While food imports in all three countries rose steeply, in Kenya they served to meet the growing demand from broad-based growth in employment and incomes stimulated by an agriculture-led industrialization, whereas in Tanzania and Senegal they reflected the weakness of the chosen strategy.

At present, intellectual and political support for the role of export crops is inadequate both among African governments and among donor constituencies—despite the fact that Africa has become a major net importer of commodities such as cotton and edible oils, which it previously exported, as internal demand has burgeoned but capacity to finance these growing imports has declined. While food

security, poverty alleviation, and environmental conservation concerns dominate the development agenda of donors, the issues of (a) export crop research and technological capacity, (b) the complex production, processing, and organizational requirements of these crops, and (c) the development of viable export strategies continue to receive inadequate attention.[24]

In the case of food crops, expenditures on research have increased significantly in recent years—in part to respond to the concerns outlined here. However, there has been excessive emphasis on technical assistance and "brick and mortar" in donor assistance, and not enough on establishing long-term human and institutional capacity—or even on using the pool of human capital that has been developed—to address the *substance* of technological issues.

The current preoccupation with food security raises a question about the validity of concentrating resources and policy attention mostly on food production programs, given the disappointing results of a similar, single-minded emphasis in the 1970s. One positive consequence of such focus, however, has been a more conscious attempt by donors to integrate food aid with financial assistance as part of a concerted strategy.[25] Recipients are concerned, however, that this might lead to conditionality on the receipt of food aid.

Resource-rich regions, and remote and resource-poor regions. The Introduction stressed the importance of balancing production programs targeted at high potential areas with consumption and welfare-oriented efforts in resource-poor regions (including policies to promote migration from these areas). Nearly all the studies in this book, on the other hand, suggest a concurrent shift in donor emphasis toward food crop production and poverty alleviation in marginal areas in the 1970s. In discussing DANIDA's experience, Ellen Hanak and Michael Loft have provided an excellent analysis of project failure in marginal areas in Tanzania (for instance, in livestock, grain storage, and road building activities) while explaining the successes of similar activities in resource-rich areas in Kenya. At a more conceptual level, Manfred Schulz and Christian Heimpel have discussed the problems inherent in Germany's consistent attempts to target resource-poor areas and to assist the beneficiaries with achieving "self-help"—the guiding principle of German development policy. In general, the failure or near failure of most donor projects to increase food crop productivity in such areas is well illustrated by the disappointing performance of the numerous donor-financed integrated rural development projects—for instance, the World Bank's projects in Tanzania, northern Nigeria, and Senegal; the United Kingdom's projects in Phalombe in Malawi and Mtwara-Lindi in Tanzania; and the European Community's project in Iringa, Tanzania.[26]

While underscoring the need for exploiting production gains in areas of high agricultural potential, these experiences also suggest that the problems of resource-poor areas can only be addressed through a long-term approach—based on a sound knowledge of location-specific, micro-level constraints—that combines concerns about production with those about the incomes and welfare of the poor. This implies a complex and sophisticated role for the public sector in formulating agricultural policy—one that most MADIA governments have not been able to articulate.

Growth and equity. Reconciling complex growth and equity objectives requires a sophisticated overall development strategy with a strong emphasis on macroeconomic management—especially in situations of fluctuating external terms of trade as well as large and unstable external assistance components in government expenditure. As the case of Kenya (and to a lesser extent Cameroon) demonstrates, a successful smallholder strategy carried out in the context of responsible macroeconomic management can allow the realization of both growth and equity objectives. On the other hand, as Radetzki has pointed out, the rapid shift in donor concerns in the 1970s toward poverty alleviation and the provision of education, health, and other welfare services in all regions and among all socioeconomic groups led to neither increased equity nor operational facilities in adverse policy environments. Most of the health centers established by SIDA, for example, suffered from a chronic shortage of essential supplies and equipment.

The World Bank took a major lead in integrated, multisectoral projects. Experience with these indicates that while short-term physical targets (of building rural infrastructure and housing for staff, for instance) were often reached, a sustainable impact on farm revenue was more difficult to obtain in resource-poor regions. The absence of suitable food crop technologies led to low or negative returns in production-oriented activities,[27] while weak local administrative capacity (as, for example, in Nigeria, Tanzania, and Senegal) prevented adequate maintenance of the established infrastructure. The strong and sustained shift out of export crops further aggravated the situation—since export crop projects were generally more successful and usually boosted farm revenues, as Walter Kennes has pointed out in analyzing the European Community's experience. With little or no growth in food production in marginal areas, and without the foreign exchange earnings from an increased volume of those export crops in which Africa has a strong comparative advantage, these countries become increasingly reliant on food imports—in particular on food aid (despite the development of import-substituting rice production through irrigation).

The overall record of the 1970s shows that, no matter how worthy the underlying intentions, neither growth nor equity are likely to be advanced by a single-minded emphasis on food security and poverty alleviation that undermines export crop production, that neglects the technological factors affecting improvement in food crop productivity, and that diverts resources into the pursuit of rapid industrialization.

In contrast, the initial structural adjustment efforts in the 1980s led to a sharp and simplistic swing of donor attention toward efficiency and away from equity concerns such as the production, consumption, and welfare needs of the poor in marginal areas—as reflected in the indiscriminate abolition of fertilizer and food subsidies.[28] Restoring the balance between efficiency and equity objectives may entail, among other things, reinstating such subsidies in the short run as a way of protecting disadvantaged groups.

Macroeconomic adjustment, privatization, and a role for the public sector. It is evident from the previous discussion that—despite the contrary tendency of both governments and donors—sound macroeconomic and sectoral policy management simply cannot be separated from the implementation of a long-term development strategy. If donor assistance is to be efficiently applied to individual country and sector circumstances, the removal of policy-induced distortions in the macroeconomy must be accompanied by sound subsectoral strategies that form a mutually consistent "macroeconomic whole" to remove the myriad micro-level constraints. Therefore a balance needs

to be struck between structural adjustment assistance (at the macro and sectoral levels) and project assistance (at the subsectoral level). In general, greater developmental substance is needed in the adjustment policies promoted by donors for these to engage the imagination of African policymakers.

In the 1970s, the failure of donors to grasp the complex repercussions of the adverse policy environment in countries such as Tanzania, Senegal, and Nigeria—as well as the consequences of their own actions in contributing to these problems in circumstances of weak internal capacity—was among the chief factors underlying poor project performance. In the 1980s, given the deterioration in many developing countries' terms of trade, their rising public expenditures, and past patterns of inefficient use of resources, donors have correctly emphasized macroeconomic and sectoral policy reform as a precondition for sustainable, long-term development, but they have left the responsibility squarely with the recipients.

Despite the problems inherent in judging the impact of structural adjustment assistance, there is no doubt that sustained macroeconomic difficulties and pressure from donors have induced governments to undertake necessary macrostructural reform. A good example is the adjustment of the excessively overvalued exchange rates in Nigeria and Tanzania in 1986, which, in the case of the latter, led to a revival of donor support. Similarly, as Johnston et al. have shown, USAID's structural adjustment aid to Kenya in 1983 may have been an important factor in trimming the country's budget and current account deficits, as well as its inflation rate.

Generalized programs for short-term adjustment are not, however, sufficient to revive agricultural growth in Africa. First, structural adjustment assistance can strain absorptive capacity while leaving intact longer-term structural problems. This is clearly illustrated by the experience of the United Kindom's program grants to Malawi and Kenya. The direct impact on either country's agricultural sector was at best limited; one reason for this was that importers of agricultural inputs already had preferential access to foreign exchange and little incentive to procure via the unwieldy program procedures. This was also the case with USAID and World Bank[29] structural adjustment assistance to Kenya and Malawi.

Second, deregulation/privatization may need to be coordinated with public sector efforts to relieve micro constraints as well as to ensure market competitiveness. For example, in view of the nature of the agricultural services needed for export crops, economies of scale in their processing, and relatively long gestation lags, it may be essential to allow for public sector provision of transport, information, credit, and distribution networks as complementary but important preconditions for decentralized, private sector agricultural activities. Unfortunately, in the 1970s, the policies of some African governments deviated substantially from this perception of an essential, but limited, public sector role. As the data on growth in public consumption presented in the Introduction show, these governments expanded the purview of the public sector as a way of expanding patronage to important clients.[30] Recent liberalization attempts have frequently overlooked the extent to which donors themselves contributed to this indiscriminate growth of the public sector—particularly in the latter half of the 1970s, when Africa was recovering from the drought, prices of primary commodities rose, and aid commitments soared. At the time, donors had ignored the fundamental factors determining the efficiency of public sector operations—for example, the domestic political environment, as well as the shortage of working capital and of technical and managerial expertise. In the 1980s, when the climate for public sector growth has been far less propitious, donors have not paid sufficient attention to the adverse effects of public sector withdrawal. The African private sector, operating in the same setting and experiencing similar problems, is not adequately compensating for these negative repercussions.

The challenge is thus again one of *balance*—in this case between appropriate emphases on public and private sector roles. If the nature and sources of some of the current constraints on *both* sectors were better understood, inefficiences in public sector performance could in some cases be corrected *without* dismantling existing structures. Several cases of donor experience illustrate these complex interrelationships. Donor experience with grain liberalization in Kenya and Malawi demonstrates how critically dependent success is on government support as well as on the timing, speed, and extent of privatization activities. The United Kingdom's insistence on restricting procurement of agricultural inputs exclusively to the private sector under its second program grant to Malawi in 1984 ignored the intensity of traditional public sector control over these activities; this restricted the flow of critical imported inputs to smallholders, benefiting manufacturing and transport firms instead. In the same vein, the private sector response to donor attempts to liberalize fertilizer distribution has been swift, but it is likely to benefit mainly large farmers and the better organized smallholders in the relatively more accessible areas—as these groups' demand for fertilizer is already well established. In Kenya, Malawi, and Senegal, poor and marginal farmers who received much donor attention in the 1970s are likely to be neglected unless *public* distribution and credit programs are devised to complement private sector activities.

Correcting—and avoiding—such imbalances will require well conceived, long-term interventions that assure foreign exchange availability, together with subsidies targeted to the needs of these groups,[31] until improved technological packages are available and distribution costs are reduced. Some African governments have clearly demonstrated a relatively stronger ability than others to implement such complex interventions; they should clearly receive primacy in donor assistance as a way of inducing others to get *their* houses in order.

Adjustment assistance has only partly reflected an understanding of the myriad micro constraints in Africa or distinguished between the differing ability and commitment of governments. Cuts in government budgets in the process of structural adjustment and the declining importance of project assistance have intensified the resource shortage, thereby restricting opportunities to fill in the gaps in private sector servicing of smallholder agriculture.

Overall, our discussion of donor experience in this section suggests that despite the strong donor influence on capital accumulation, African governments have, nevertheless, managed to exercise their own sociopolitical objectives in choosing and undertaking strategic investments. As the case of Kenya demonstrates, however, unless there is a strong political will for an agriculture-led strategy, and unless technocrats can successfully translate this commitment into a long-term framework for sequencing and phasing of investments in an appropriate policy setting, growth and equity objectives will be difficult to achieve.

Donor Country Constraints on Aid Effectiveness

The institutionalization of donors' own internal constituencies for aid, their political philosophies, their resource bases, and their developmental experiences in the programming process have all been crucial in designing donor assistance programs. The mix of these parameters has been particularly important in constraining aid effectiveness and diminishing the *real* value of the resource transfers to recipients.

Institutional Constraints

A major pitfall of donor assistance, as highlighted by Johnston et al., by Hanak and Loft, and by Lele and Jain, has been the weakness of its underlying analytical foundations. First, as the cases of USAID and DANIDA illustrate, most bilateral donors do not have the in-house capacity to engage in comprehensive macro-level or sectoral analysis that could provide sound economic justification for undertaking agricultural investments. Even in the World Bank, strategic thinking on long-term agricultural development issues has been limited,[32] and internal capacity for such thinking based on expert knowledge is rapidly diminishing through the attrition of experienced staff. Second, the experiences of these donors reveal how actual commitments are dependent on a staff incentive structure that largely responds to "top-down" initiatives to meet political objectives set in donor capitals, and on the procedural pressure to transfer resources—rather than on donors' country or sector analyses, or even the grassroots articulation of African needs.

Furthermore, as Radetzki has emphasized, donors have not paid much attention to broader and longer-term evaluative work as a guide to improving assistance strategies. While project evaluations, and more recently structural adjustment evaluations, proliferate (indeed, donor assistance is considered to be one of the most intensively evaluated industries), little systematic attempt has been made to assess donor assistance in terms of a wider conceptual framework—from the viewpoint of long-term macroeconomic or sectoral strategies, or in terms of its impact on resource allocation or other effects. The effectiveness of donor assistance often has been judged simply by its volume rather than by its quality. Moreover, the DANIDA and World Bank experiences indicate a weak learning process among donors and governments alike from the review and assessment of project activities—a tendency that has perpetuated unviable projects with high risks of failure.

Constituency Pressures

Constituencies have proven to be extremely useful allies in enabling donors to generate public support for preserving or increasing their development budgets (as Hanak and Loft have demonstrated in the case of Denmark), but their powerful impact on aid philosophy and practice has also given rise to various operational problems.

The United States' strategic interests have played a critical role in determining the content and stability of its assistance to developing countries.[33] For example, Johnston et al. have pointed out that the lack of a clear political constituency for long-term U.S. assistance to African countries has contributed to erratic funding and policy shifts.[34] However, it is clear that even unstable assistance, if deployed effectively, can have substantial positive effects—as the case of India demonstrates.[35]

The development assistance policies of Denmark, Sweden, and Germany, in contrast to the United States, have been founded on a wide mix of philanthropic and economic interests that have contributed to the diversification and fragmentation of aid portfolios (albeit relative stability in aid levels). Schulz and Heimpel, as well as Radetzki, have also indicated how the emergence of structural economic problems within Germany and Sweden—for example, unemployment in Germany and external deficits in Sweden—has over the past decade led to a strengthening of the commercial constituency vis-a-vis the philanthropic interests, resulting in an increased tying of assistance.

Overextension of Comparative Advantage

Donors should ideally fund those activities that reflect a strong correspondence between their own internal strengths/interests arising from their resource bases *and* the recipient's interests. Yet in practice this is far from simple because of the infeasibility of the sheer range and magnitude of activities that recipients have been keen to undertake regardless of absorptive capacity and that donors have been eager to finance for fear of alienating constituencies that currently or potentially support assistance programs. The overextension of donor involvement beyond their comparative advantage as well as their planning and implementation capabilities has contributed to the marginalization of their portfolios and to the misallocation of assistance as well as the associated recipient country capital.

A positive example of donors utilizing their comparative advantage is provided by USAID assistance to the MADIA countries, where a major thrust has been the establishment of institutions of higher education and training programs for nationals. These efforts have been shaped by the replication of the successful land-grant college model in promoting agricultural development in the United States itself and elsewhere—notably in Asia.[36] Similarly, British and French assistance to the MADIA countries, with the help of strong technical assistance support (discussed below), extended the colonial programs of agricultural research, technical services, and export crop production into the postindependence era.

As is evident from the assessments in this volume, however, the U.S. and U.K. assistance programs have experienced strong shifts in emphasis away from their chief areas of expertise. Johnston et al. have documented the restarting and enlargement of the USAID program in Senegal and its redirection toward extension activities after the Sahel drought. The USAID program in Cameroon experienced a similar shift—albeit to a lesser extent—diversifying into irrigation, input supply, and livestock, in addition to providing assistance for education and training. In Tanzania, the AID mission rejected the government's request for support for advanced degree training in agriculture on grounds that Washington preferred projects that "benefit the poor directly in the shortest time possible." Similarly, Howell has noted the shift in U.K. assistance away from budgetary support to East Africa in the late 1960s—and away from sustaining long-standing research programs and institutions—toward shorter-term interventions in support of direct poverty alleviation via integrated rural development projects in the 1970s.[37] This has been associated with

a gradual attrition of British expertise in tropical agriculture (discussed below).

Swings in donor policy are of course grounded in complex factors—as illustrated by the discussion of the shift away from export crop production and toward food security in marginal areas in the 1970s, or the emphasis on adjustment following the macroeconomic difficulties in the 1980s. However, these shifts have degenerated into "fads" that have made particular activities—whether integrated, multisectoral projects in the 1970s, policy reform in the 1980s, or (most recently) pro-environmental "sustainable" development—fashionable among all donors regardless of the extent of their validity in the differing circumstances of recipient countries. These fads in development assistance programming have led to wholesale shifts in donor concerns and policies and have overshadowed the need for stable, long-term assistance strategies.

When donor assistance has not suited their own objectives, recipient governments have resisted donor preferences as to projects, programs, and policies—and have often reacted by adopting intransigent postures. Cases where influential donors can affect the views of other donors are especially problematic. In those involving conditionality, for example, such a situation can seriously curtail donor commitments—as happened in Tanzania in the 1980s.[38] Donors, for their part, have quite justifiably perceived recipient policies as playing off one donor against another to secure the desired types of assistance.

The chief factor underlying such recipient-donor conflicts has been the weak capacity of African governments. Countries such as Kenya and Cameroon, with their relatively better economic management infrastructure, have resisted donor pressures more successfully than others—at the cost of developing notoriety among donors for their recalcitrance.

Tied Assistance and Its Effects

Regardless of its particular underlying motivations, tied assistance can have a substantial positive impact on development. Examples abound of U.S. disposal of food surpluses that served important humanitarian and fiscal objectives in India and elsewhere in Asia. Such assistance at the same time allowed experts to focus on the development of agricultural science and technology—thus fueling the green revolution—instead of diverting recipient time and resources by causing a proliferation of projects or structural adjustment operations. Indeed, similar tied food aid—if it served all the food import needs of African countries (over half of which are currently financed commercially)—might be an effective way of transferring resources to Africa, while simultaneously allowing policymakers to concentrate on the substance of development.[39]

Nevertheless, the tying of donor assistance is one of the more pernicious forms of constituency pressure. Donors generally operate on the assumption that it is easier to maintain public and parliamentary support for development assistance programs either if assistance is provided as emergency relief or if immediate, tangible benefits can be shown to accrue to the donors' own production, exports, and employment. In the aggregate, the effects of these tying arrangements on the balance of trade of donor countries are generally minuscule in the short run, but through misallocation of capital, can have serious consequences for a recipient's long-run growth and, in turn, for the export prospects of donors. Yet the untying of assistance poses a real dilemma for donors in that losing the support of constituencies that benefit from tied bilateral assistance can cause the demise of the entire aid program.

The most direct and obvious mechanisms of tying are: (1) by *source*, requiring the recipient to use assistance to purchase goods and services in the donor country; (2) by *end-use*, requiring that the assistance be directed to a specified project or sector.[40] Tying overstates the real value of donor assistance when it decreases the ability of recipients to obtain the most economic and efficient forms of assistance—that is, when the equipment costs more than it might have cost to purchase it from an alternate source, or when it leads to the use of technologically inappropriate equipment.

In this book, only Hanak and Loft, and Radetzki have addressed the issue of tied aid—focusing mainly on the incidence of tying by source and the consequences of allowing the donor's resource base to determine the choice of technology. SIDA and DANIDA, however, are by no means the only agencies engaging in this practice. Perhaps due to its political sensitivity, the other donor studies in this book have been less candid about the issue. Johnston et al. do, however, acknowledge that the problem of maintaining donor-made equipment can undermine project success.

Statistics of the OECD's Development Assistance Committee (DAC) show that, during the period 1973-87, fully and partially tied assistance accounted for 60-80 percent of total bilateral assistance from the United States and the United Kingdom, and for some 60 percent of French assistance to developing countries. In the 1980s, the tied component of total bilateral Official Development Assistance (ODA) has decreased relative to the 1970s in the cases of the United States and, to a lesser extent, the United Kingdom. Only 20-40 percent of the assistance provided by Denmark, Sweden, and Germany has been formally tied. Nevertheless, Hanak and Loft as well as Radetzki have shown that the return flow of orders for goods and services to industry in Denmark and Sweden is about twice as high. While part of this can be attributed to the competitiveness of these countries' industries, the authors indicate that a substantial flow results from the "informal" tying of assistance. Thus in the case of DANIDA, for example, much of the hardware (not to mention the required technical personnel) even for untied (i.e., "project") aid is procured in Denmark, and it has been difficult to get projects approved if such items are not produced "at a reasonable cost" in the country. In line with Radetzki's observation that Sweden's traditional altruistic constituency has weakened in favor of commercial interests, DAC statistics show an increase in the proportion of tied assistance in bilateral Swedish ODA—from 17 percent in 1980 to 35 percent in 1987. Similarly, the desire in Germany to take into account the employment effects of development assistance in the 1980s has been instrumental in raising this share from 18 percent to 42 percent over the same period.

In general, tied assistance has negative consequences when it leads to financing projects which, in terms of the execution of an appropriate strategy, should not be undertaken at early stages of development. In the cases of the smaller bilateral agencies—which have fewer but concentrated areas of expertise—it is perhaps less surprising that the donor's resource base (not necessarily coincident with the recipients real needs) should become an important determinant of the technological content of tied foreign assistance. In the DANIDA and SIDA cases—illustrating an all-too-frequent outcome in other donor projects as well[41]—inappropriate technological choices, such as those in the

cases of a diffusion-based process for sugar extraction, mechanical grain storage, and diesel-powered water supply installations were fundamental in undermining the success of several projects. Hanak and Loft have pointed out, moreover, that "the spoils of tying have in practice been limited to an elite group of no more than fifty large export-oriented Danish firms, dealing mostly in state-of-the-art technology."

A major step toward untying donor assistance—although it applies solely to bilateral *adjustment* operations, not to project assistance or project-related technical assistance—was made in 1988 in the context of the Special Program of Assistance for nineteen low-income, debt-ridden countries in Africa (including Kenya, Malawi, Tanzania, and Senegal). The United States, France, Sweden, Norway, Germany, Japan, Finland, and Switzerland have agreed to untie 50-100 percent of their (bilateral) cofinancing and coordinated financing in support of World Bank (IDA) adjustment operations in these countries—making this assistance available for procurement on a worldwide basis. Since the success of these adjustment programs depends upon a timely flow of disbursements to finance essential imports of raw materials, spare parts, and basic consumption goods, this provision is expected to reduce the procedural constraints of tied procurement that not only tax recipient capacity but also slow down the rate of disbursement.

Technical Assistance and Its Effects

In view of the need to develop human and institutional capital for sustained growth, expatriate technical assistance must involve a continuing commitment for improving local capacity through the support of institutions that can train the types of personnel needed in the recipient country. Assessing the role of donors in building such capacity therefore requires a close look at both the quantity and quality of their technical assistance. In the absence of a process of transfer of donor technical and managerial expertise to nationals, large technical assistance components in total donor assistance simply mean a corresponding reduction in the real financial resources accruing to recipients. This raises questions about the real value of resources being transferred to Africa through external assistance—and the deceptiveness of numbers on aggregate assistance. Since most technical assistance takes the form of grants, it does not impose any apparent financial costs on the recipient, but its adverse effects nevertheless may be substantial.

The donor studies in this book indicate that technical assistance has constituted a very substantial input of donor projects and programs in the MADIA countries. It is important to exercise caution, however, in interpreting the technical assistance figures provided in these studies. While some authors have provided the share of technical assistance in the donors' *agricultural* assistance, others have only indicated its share in donors' *total* assistance to these countries.

The studies by Schulz and Heimpel as well as Kennes have indicated the share of technical assistance expenditures in donor assistance to *agriculture* in the MADIA countries. In the case of Germany, while technical "cooperation" expenditures during the period 1973-85 accounted for about 45 percent of total assistance to the six countries, they accounted for over 85 percent of agricultural assistance. In the case of the European Community, on the other hand, technical assistance accounted for only 10-15 percent of assistance for agriculture and rural development to Cameroon, Senegal, and Tanzania (although its share rose to 20 percent in the fifth European Development Fund—covering 1981-85).

The other donor studies have only indicated the share of technical assistance in *total* assistance to the MADIA countries. In the case of French assistance to Cameroon, expenditures on technical assistance as a percentage of total Ministry of Cooperation assistance rose more or less steadily from 33 percent in 1961 to 81 percent in 1985 (while total assistance actually *declined* in real terms); the share of technical assistance in total Ministry of Cooperation assistance to Senegal, on the other hand, has fluctuated between 46 percent and 76 percent during 1960-85 (while total assistance increased by barely a quarter in real terms). The United Kingdom's expenditures on technical assistance have accounted for up to 35 percent of total bilateral flows to Malawi, Tanzania, and Kenya. SIDA's and DANIDA's technical assistance represented some 20-30 percent of their total assistance to Kenya and Tanzania. Meanwhile, the World Bank's technical assistance has accounted for a very small share of its total assistance to the six MADIA countries—ranging during the period 1965-88 from 0.3 percent of total assistance in the case of Malawi to 5 percent in Senegal—and most of it has been provided in the 1980s. While Johnston et al. have not discussed the share of technical assistance in U.S. assistance, DAC statistics indicate that it has ranged from 15-30 percent of total ODA disbursed by the United States to all developing countries.[42]

As we discussed in the Introduction, quantitative estimates of the effectiveness of these large shares of technical assistance on the development of local human and institutional capital are difficult. Substantial qualitative scrutiny of technical assistance in the sample countries leads us to conclude that, despite the massive scale of this external involvement, few instances of technical assistance have made a lasting impact either on agricultural performance or on the development of long-term local capabilities. The successful experiences with tea and coffee in Kenya, and with cotton in francophone West Africa clearly reveal that it is the *quality* rather than the *volume* of technical assistance that is a criterion for guaranteeing its effectiveness.

Particularly critical among the quality considerations are: (1) the *duration* of technical assistance programs, and the *real* and *relevant* expertise that so-called technical "experts" bring to bear; and (2) the effectiveness of such programs in developing long-term human and institutional capabilities through training and in generating local confidence rather than creating a sense of psychological dependency on outsiders.

As we have argued earlier, the experience of the former "colonial" donors illustrates how the success of donor interventions depends upon building up a long-term presence as well as expertise in particular technical areas that can only be supplied by personnel based in Africa who are knowledgeable about local circumstances. As the example of cotton development by the *Compagnie Francaise de Développement des Fibres Textiles* (CFDT) shows, high quality technical assistance that leads to substantial positive externalities over time may be desirable even if it entails relatively high costs.[43] On the other hand, in view of the decline in Senegal's per capita GNP during 1960-87, the presence of very large numbers of French technical assistance personnel suggests that this large French investment has had little developmental impact on Senegal.

Over time, however, a major attrition of high quality donor expertise has occurred not only in the staffing of donor agencies, but also in their field-based personnel—as shown, for example, in the substantial reduction of U.K. contributions to research programs in East Africa. Between the 1970s and the 1980s, the number of British personnel in the field has fallen sharply. This decrease may imply increased local technical capabilities in Africa. It may also signal a decline in the familiarity of bilateral donors with African issues, as well as greater reliance on shorter-term consultants, whose association with the field is limited to a few visits.[44] The contractual nature of these newer forms of technical assistance has not been conducive to the creation of a cadre of high quality field staff willing and able to help with long-term development at the project, subsector, sector, or macro levels.

The quality of relationships between donor and recipient personnel—in addition to the long-term association of the former with local circumstances—is of fundamental importance for the training and development of local scientific and technical personnel. The extended involvement of the colonial donors has contributed to the development of smallholder agriculture, but it has not been very effective in creating *sustainable* human capacity. Howell, for example, has pointed out how deficient training and institutional development has prevented the consolidation of research gains after the reduction of U.K. commitments in East Africa. The newer technical assistance programs, on the other hand, while not contributing much to the growth of smallholder productivity, have had even less influence on the creation of long-term capacity (unlike, for example, the earlier experience with the Kenya Tea Development Authority). For example, the experiences of the German Agricultural Team in Kenya, the World Bank's ADPs in Nigeria, or SIDA's technical assistance to the ministries of water in Tanzania and Kenya all indicate that the training components of projects have been consistently overshadowed by more pressing, shorter-term objectives—such as procedural pressures to transfer resources and demonstrate physical results. Considering the large proportions of donor assistance going to the MADIA countries in the form of technical assistance, it is little wonder that its contribution to the long-term accumulation of human and institutional capital and thus to the growth process has been so limited.

The implications of these large shares of technical assistance are even more serious in light of the relative importance of the different donors in the respective recipient countries. Multilateral institutions, which rely less on technical assistance, have played a smaller role than the bilaterals in official capital flows to the MADIA countries. Thus the World Bank, although it has been among the top three donors in Malawi, Kenya, and Tanzania, has only in Malawi accounted for a large share (22 percent of total ODA receipts during 1970-84). It has had a 10 percent share in Kenya, Tanzania, and Cameroon. The European Community has been an important player mainly in Senegal (17 percent), and to a lesser extent in Cameroon (11 percent). In contrast, among bilateral donors that have provided large amounts of technical assistance, France—the leading donor in Senegal and Cameroon—has accounted for a third of all ODA receipts in both countries. Similarly, the United Kingdom has had a 28 percent share in Malawi and a 15 percent share in Kenya. Although Howell shows that the multilateral component of U.K. assistance has continuously increased at the expense of bilateral assistance since 1975—reaching 42 percent of the total program by 1987—it is less clear how much French and German bilateral assistance in the 1980s has been replaced by multilateral assistance. Thus the relative ineffectiveness of large technical assistance components is likely to persist to the extent that the trend toward multilateral donor assistance still constitutes a *small* amount of the total assistance to African countries. Yet this trend at the same time poses a dilemma for donors as concern intensifies about what are perceived to be incursions of multilateral institutions into the sovereignty of African countries.

Awareness of these issues among bilaterals is gradually leading to a greater focus on training and capacity building. If these are not to become another set of clichés to be replaced by still others, African governments and elites need to urgently focus on effectively articulating their demands.

The Problem of Recurrent Cost Financing

Donor policy on recurrent cost financing has not been explicitly treated in this book. Donors have shied away from providing recurrent resources mainly because these entail, in principle, a never ending commitment likely to create adverse dependency effects for the recipient. However, the importance of fully ascertaining recurrent cost implications at the project preparation stage is now generally recognized. The necessity of financially participating in projects for longer periods of time and the notion of sustainability—with its implications for sectoral concentration and long-term commitment—are being gradually internalized in aid programming.[45]

Although recurrent cost requirements vary among their subsectors, agriculture and rural development are highly recurrent resource-intensive sectors. The development of smallholder agriculture in particular puts a high premium on the continuing availability of recurrent funds for the maintenance of a supportive physical and service infrastructure.

In the Introduction, we showed that Tanzania, Nigeria, and Senegal have suffered from large budget deficits relative to Cameroon, Malawi, and Kenya, but since 1985-87, the situation has worsened even in Malawi and Kenya. The experience of the MADIA countries in general illustrates the governments' tendency to plan much larger investment portfolios than resource availability permits. Moreover, governments and donors have placed far too much emphasis on physical structures and on protecting their pet projects from the budgets of finance ministries—but far too little on providing for their operation and maintenance.

In general, three major reasons underlie the shortage of recurrent finance in developing countries.[46] First, since both donors and recipients have tended to equate development expenditure with investment, the overarching need to generate funds for this purpose has led to arbitrary ceilings on the recurrent budget. Second, the recurrent expenditure requirements depend on the sectoral mix of development projects; thus development programs placing heavy emphasis on projects in health, education, and agriculture will require higher recurrent outlays per unit of investment than investments in physical infrastructure such as roads and dams. Third, excessive expenditures on high profile non-developmental activities such as defense and public administration (e.g., in Tanzania and Senegal) compete with the recurrent expenditure needs of development projects and programs and add to the political difficulties of resource allocation.

In discussing the implications of these factors for the effectiveness of donor assistance, Radetzki, as well as Lele and Jain, have indicated how the investment bias of public expenditures—and of the large inflows of donor assistance supporting them in countries like Kenya and Tanzania—accelerated the rate of growth of the aid-financed capital stock (and of the funds needed to keep it operational) well beyond the governments' revenue earning capabilities. Experience with SIDA's water supply and health programs in Tanzania and Kenya, and with the World Bank's feeder road development (via Agricultural Development Projects) in Nigeria, shows that donor programs, while contributing significantly to physical capital formation in Africa, have been beset by recurrent resource shortages that have resulted in low rates of utilization and, in many instances, in decay of the accumulated stock.

In the early 1970s, the mix of investments in the MADIA countries shifted from a heavy bias in favor of physical infrastructure development toward a range of agricultural and rural development projects promoting food production and welfare services in poorer areas—i.e., toward activities requiring larger recurrent cost commitments. The sharp increase in donor commitments to the agricultural sector and the diversification of donor activities led to a multiplicity of projects that were poorly integrated into the overall budget process. The recurrent costs of a wide array of separately devised projects proved unsustainable in view of the overall resource constraint, and all too often it led to low, nil, or negative returns. Lele and Jain have pointed out, for example, that projects cofinanced by the World Bank and other donors—all of which generated low economic returns—in just four subsectors accounted for at least half of the entire development expenditure budget of the Kenyan Ministry of Agriculture during 1977-82. The World Bank's IRDPs in Kigoma, Tabora, and Mwanza/Shinyanga in Tanzania; the Agricultural Research Project in Senegal; and the European Community's large-scale irrigation schemes in Cameroon and Senegal all exemplify the problem of recurrent expenditures in poorly conceived agricultural and rural development investments. Such projects ignore the macroeconomic feasibility of aggregate investment programs, and—for lack of effective sequencing and phasing—overextend available resources, do not generate adequate returns, and thus remain dependent on government or donor support. These experiences underscore the importance of conceiving rural development projects in an appropriately managed and funded long-term development strategy.

Within agriculture, the shift of focus away from export crops toward food crops also has had important negative budgetary implications. Export crop production generally brought in higher economic rates of return and contributed substantially to fiscal revenues. Food crop production, on the other hand, demanded more recurrent resources in the form of extension services and together with price stabilization activities, usually has been subsidized by governments. In Malawi, for example, the Agricultural Development and Marketing Corporation cross-subsidized the production of maize from tobacco revenues. Moreover, grain marketing parastatals have run up huge losses. The accumulated overdrafts of the National Milling Corporation of Tanzania, for example, had risen to TSh 2.8 billion (about US$ 250 million) by 1983. In the case of Kenya, a recent European Community-funded study[47] of the National Cereals and Produce Board estimated the accumulated losses at nearly KSh 5 billion (about US $300 million). These losses compare with total central government expenditures on agriculture of TSh 545.1 million in Tanzania in 1983 and KSh 131 million in Kenya in 1986. This should not be interpreted to mean that food subsidies are either unnecessary or undesirable but that growth in exports and in government revenues is essential to pay for them. Nor does this imply that projects for increasing food crop production should not be undertaken—rather, they must be conceived as part of a balanced, long-term strategy.

The Lessons from Donor Experience

This book has not addressed all of the major types of external assistance accruing to agriculture and rural development programs in the MADIA countries. A study of official development assistance by definition ignores the increasingly vital role played by voluntary agencies in the development process.[48] We admit that this is a serious omission in view of the number of such organizations involved in African countries, the attendant problem of coordination, and most important, the concerns expressed in this book about the tendency of governments to centralize power and discourage genuine grassroots institutions. Nevertheless, in view of the large amounts of donor assistance going to most MADIA countries, it is clear that the lessons drawn here are both valid and useful.

In general, donor involvement in the MADIA countries has been wide and varied and has laid some important foundations of physical and social capital—which are necessary, if not sufficient, conditions for long-term growth. While these capital stocks have grown steadily since independence, the contribution of donors to the development of human and institutional capacity to effectively manage these resources for the purposes of broad-based, sustainable growth has been far from satisfactory—a deficiency that has in many cases led to decay of the physical stock.

The broad lessons for MADIA donors and governments emerging from this study are:

1. *A long-term agricultural strategy, set in a conducive macroeconomic and sectoral policy framework that is feasible on a day-to-day basis, is essential for broad-based growth.* The MADIA study findings in this connection are instructive. The countries whose agricultural sectors have grown the fastest have also been the best performers in terms of GDP growth. Moreover, their macroeconomic and sectoral policies in general have been more important than their endowments—or exogenous shocks—in explaining their performance. In Kenya and Cameroon, where a relatively sound macroeconomic and sectoral policy framework was in place, agricultural and overall performance was characterized by growth with equity. In Malawi, where macroeconomic policies were sound, but sectoral policies weak, the benefits of the growth achieved went largely to the estate sector. In Tanzania, Nigeria, and Senegal, where policies were adverse at both the macro and sectoral levels, there was very little growth.

2. *Building human and institutional capacity is crucial for planning and implementing strategies for long-term growth and for maintaining a supportive policy environment.* The World Bank's new initiative toward a consensus approach and a long-term commitment by both national governments and donors to capacity building is a step in the right direction. For such efforts to be successful:

- African governments should actively develop and utilize their own personnel and institutions.
- Donors must assist in enhancing African capabilities for sound macroeconomic and sectoral policy research and analysis in support of the effective articulation of African development goals and needs.
- Centers of excellence on African issues should be established in both donor and African countries.
- Donors must provide high quality technical expertise that explicitly assures the gradual transfer of technical and managerial skills to African nationals on a long-term basis.
- Donors should assist African governments in setting up viable national systems for long-term data collection and analysis. African governments, in turn, must improve the flow of this information to both African and donor nationals in order to generate active public debate on the causes and consequences of government and donor actions.

3. *A strategy for long-term growth must assure balance between the production of export crops and food crops.* The export pessimism that led to a shift out of export crop production in Africa continues due to concern about the disposal of surplus commodities, the serious deterioration in productive capacity for all important export crops (for example, tea, coffee, and cocoa, as well as cotton, groundnuts, and palm oil) in many African countries, and the resulting inability to compete in world markets. Donors must assist African countries in reviving the production of traditional export and food crops in which they still have a clear comparative advantage.

4. *Raising factor productivity is essential and urgent in view of rapidly increasing population pressure, the deterioration of the natural resource base, and low rates of agricultural intensification.* While expenditures on agricultural research have increased significantly, much more effort is needed to address the *substance* of research. More research is needed on export crops as a complement to, for instance, the currently exclusive focus on food crops of the Consultative Group on International Agricultural Research. Moreover, research and extension efforts need to be broadened beyond plant breeding toward soil management techniques that (as SIDA and DANIDA projects in this area demonstrate) could go a long way toward conserving and enhancing soil potential, and toward the integration of cropping with livestock and forestry.

5. *Programs for increasing agricultural production should focus on high potential areas. Policies to address the employment and consumption needs of populations in remote and resource-poor regions must be conceived in the context of a long-term strategy.*

6. *Donors should address micro constraints in conjunction with macro-structural reform and privatization.* A positive effect of the crisis in Africa has been to force African governments to closely examine domestic policy failures and to bring issues that were overlooked in the 1970s, such as privatization, out into the open. It is clear, however, that the "adjustment" approach of the 1980s relying mainly on policy reform cannot put African agriculture back on a growth path alone.

If reform and investment packages are to have sustainable positive effects, they must be tailored to the diversity of country circumstances, specific endowments, and long-term development needs. More attention must be given to easing micro constraints—such as weak research, transport, credit, marketing, and information networks—that persist even while structural adjustment programs are being completed. The revival of traditional crops in Africa will require the alleviation of such nonprice constraints in addition to the ongoing process of restructuring price incentives. In many cases, this implies a need for public sector efforts to complement privatization by providing a regulatory but sustaining environment. An active role for the public sector must not, however, be allowed to deter or suppress the political representation of private producer interests. Finally, it will be necessary to reinstate assistance at the subsector and project level in its essential role as development catalyst and guarantor of macropolicy reform within a framework of appropriately funded and targeted macroeconomic and sectoral policies.

7. *Donors should establish and emphasize their own comparative advantage in developing assistance strategies.* The broader donor record in the MADIA countries suggests that for a number of reasons, including their own resource bases and constituencies, donors possess distinctive strengths and weaknesses that directly impact on the effectiveness of their assistance. Donors need to carefully select the particular area or areas in which they can provide consistent, high quality expertise to African countries.

The multilateral agencies may have a comparative advantage in assisting recipients with economic and policy research and analysis for developing tailor-made, country-specific strategies in addition to large-scale financial transfers for ensuring macroeconomic and sectoral policy reforms. Smaller, bilateral agencies, in contrast, are likely to be better at promoting the development of local human and institutional capacity, which requires fewer financial resources but much more intensive nurturing over a long period. Building on its earlier experience in establishing agricultural universities in Asia and Africa with the help of various U.S. land-grant universities, USAID is particularly well placed to encourage long-term twinning arrangements between African and home-based institutions. Similarly, the United Kingdom and France, given their long experience with tropical agriculture in Africa, need to develop mechanisms to ensure that the critical expertise and knowledge base developed over time is transferred to African nationals before it erodes any further. Bilateral donors also possess important specialized expertise in certain sectors that have been successfully developed in their own economies. Two such examples are DANIDA's expertise in livestock and SIDA's in forestry and soil conservation. Yet experience with these activities in Tanzania makes it important to stress that such interventions will be effective only if a supportive macroeconomic and sectoral policy environment exists and if donors are sufficiently familiar with micro-level conditions.

In general, donors need to coordinate their assistance around the substance of long-term strategies, but to concentrate their resources in their areas of expertise rather than attempt to undertake tasks for which they are not well equipped. Thus donors need not *all* be involved in the currently fashionable trend of giving assistance for securing structural adjustment. They must, however, assure that their assistance programs to individual countries successfully combine a long-term development strategy with the more pragmatic considerations of day-to-day economic management.

Notes

1. The MADIA countries are Kenya, Tanzania, and Malawi in East Africa, and Cameroon, Nigeria, and Senegal in West Africa. The donor agencies are the World Bank, the United States Agency for International Development (USAID), the United Kingdom Overseas Development Administration (UKODA), the Swedish International Development Authority (SIDA), the Danish International Development Agency (DANIDA), the European Community, and the governments of France and West Germany.

2. The so-called Dutch disease refers to the contraction or stagnation of traded-goods sectors in response to a favorable shock obtaining from either a resource discovery or an increase in the price of a commodity export (e.g., oil). This windfall causes a reallocation of productive factors: (1) factors of production move from other activities into the booming sector; and (2) due to increased spending on nontraded goods, factors of production move from traded-goods into nontraded goods sectors.

3. When spent on nontraded goods sectors, excessive donor assistance may cause Dutch disease effects by exerting upward pressure on the exchange rate and increasing labor costs in the traded-goods-producing sectors, which lead to a decline in external competitiveness. Therefore, if reduced export performance is to be avoided as a consequence of the substantial increase in the volume of external assistance, explicit policies need to be designed to reduce the conflict between export promotion and the growth of the nontraded sectors. See Sweder van Wijnbergen, "Aid, Export Promotion and the Real Exchange Rate: An African Dilemma," Report No. DRD199, Development Research Department (Washington, DC: World Bank, October 1986).

4. The agricultural performance and policies in the six countries—outlined in the introduction—provide the context for objectively assessing the evidence contained in the donor studies.

5. Robert Cassen recognizes this to be more generally true for Africa relative to the more positive experience with donor assistance in Asia. See Robert Cassen and Associates, *Does Aid Work? Report to an Intergovernmental Task Force* (Oxford: Clarendon Press, 1986). In a more longitudinal study of donor assistance and development involving the experience of countries in Latin America as well as Asia, Lele and Nabi arrive at similar conclusions. See Uma Lele and Ijaz Nabi, eds., *Aid and Development*. See also World Bank, *Rural Development: World Bank Experience, 1965-1986* (Washington, DC: World Bank, 1988).

6. See Christine Jones, "A Review of World Bank Agricultural Assistance to Six African Countries," MADIA Paper (Washington, DC: World Bank, 1985).

7. Kenya, Malawi, and Senegal, for example, have superior information bases than Tanzania, Cameroon, or Nigeria. Yet even in periods of military dictatorships, Nigeria has perhaps had the most open debate on public policy and its consequences than any of the other MADIA countries to date.

8. The differences in time periods reflect the differences in data availability between the aid studies.

9. Uma Lele and Juan Gaviria have elsewhere documented the contribution of these to linking production with markets in some cases—as, for example, in Nigeria, linking the North with the South. See Uma Lele and Juan Gaviria, "The Interaction Between Transport and Agricultural Development in Africa," MADIA Working Paper (Washington, DC: World Bank, forthcoming).

10. See Paul Collier, "Aid and Economic Performance in Tanzania," in Uma Lele and Ijaz Nabi, eds., *Aid and Development*.

11. As Paul Collier has discussed, the B.I.S. preempted the public resources, was foreign exchange intensive, and allocated resources to investments that generated little output.

12. See Uma Lele, "Sources of Growth in East African Agriculture," *World Bank Economic Review*, 3, January 1989, pp. 119-144.

13. The costs of procuring, transporting, and marketing smallholder output as well as of providing services and inputs to smallholders can be greater than those for large farmers (as the experience with tea and coffee in Kenya demonstrates). There has been a poor understanding of the impact of these factors on increasing public expenditure commitments to smallholder agriculture in the absence of the commensurate growth in factor productivity. See Uma Lele and Manmohan Agarwal, "Smallholder and Large-Scale Agriculture in Africa: Are There Trade-offs in Growth and Equity?" MADIA Working Paper (Washington, DC: World Bank, 1989).

14. For a discussion of the United States' role in India, see Uma Lele and Arthur Goldsmith, "The Development of National Agricultural Research Capacity: India's Experience with the Rockefeller Foundation and its Significance for Africa," in *Economic Development and Cultural Change*, 37, January 1989.

15. It should be noted, however, that the USAID study includes various major investments in transport infrastructure (such as the TransCameroon Railway and Tanzam Highway) under this rubric. If the category "rural infrastructure" is excluded from aid to "agriculture and rural development," then the latter's share in total USAID aid to the MADIA countries falls to around 47 percent, which is still very high in comparison to the other donors.

16. See Uma Lele and Ijaz Nabi, eds., *Aid and Development*. See also Uma Lele and Arthur Goldsmith, "The Development of National Agricultural Research Capacity."

17. The Kenyan government, in turn, has not used the substantial numbers of trained Kenyan personnel that are now available. See Uma Lele and L. Richard Meyers, "Agricultural Development and Foreign Assistance: A Review of the World Bank's Experience in Kenya, 1963-1986," MADIA Working Paper (Washington, DC: World Bank, 1986).

18. See Uma Lele and Steven Stone, "Population Pressure, the Environment and Agricultural Intensification: Variations on the Boserup Hypothesis," MADIA Working Paper (Washington, DC: World Bank, 1989); Uma Lele, Robert Christiansen, and Kundhavi Kadiresan, "Issues in Fertilizer Policy in Africa: Lessons from Development Programs and Adjustment Lending, 1970–87," MADIA Working Paper (Washington, DC: World Bank, 1989).

19. See Organization of African Unity, *Lagos Plan of Action for the Economic Development of Africa, 1980-2000* (Geneva: International Institute for Labor Studies, 1981).

20. As Johnston et al. have pointed out, for a donor trying to grapple with periodic problems of surplus production at home, the development of agricultural colleges in Africa was less controversial than directly productive research. Since the effects of the former on agricultural production would only be felt after long lags, it would be less threatening to U.S. interest groups.

21. See Uma Lele and L. Richard Meyers, "Agricultural Development," and Uma Lele and Manmohan Agarwal, "Smallholder and Large-scale Agriculture."

22. See J.C. de Wilde, *Experiences with Agricultural Development in Tropical Africa* (Baltimore: The Johns Hopkins University Press, 1967), and Uma Lele, *The Design of Rural Development: Lessons from Africa* (Baltimore: The Johns Hopkins University Press, 1975).

23. An important exogenous factor underlying agricultural stagnation in Senegal has been the declining and variable rainfall.

24. See Uma Lele, Nicolas van de Walle, and Mathurin Gbetibouo, "Cotton in Africa: An Analysis of Differences in Performance," MADIA Working Paper (Washington, DC: World Bank, 1989).

25. See John Mellor, "Food Aid and Development" in this book.

26. As pointed out by virtually all the authors, the adverse policy environment in Tanzania in the 1970s was a major factor underlying the poor performance of donor projects.

27. Seventy-five percent of the World Bank's rural development projects in East Africa implemented over 1974-79 failed (the corresponding figure for West Africa was 40 percent). These were mostly integrated projects focused on poorer areas and populations, and on average generated a weighted rate of return of less than 2 percent. See *Rural Development: World Bank Experience, 1965-1986*.

28. See Uma Lele, "Structural Adjustment, Agricultural Development, and the Poor: Lessons from the Malawian Experience," MADIA Working Paper (Washington, DC: World Bank, 1988).

29. See Uma Lele, "Structural Adjustment."

30. Marketing parastatals, for example, have been one of the most important forms of public intervention in both East and West Africa. They have been the means for distributing scarce resources and services such as agricultural credit, fertilizers, consumer goods, food aid, food supplies, as well as employment patronage. See Uma Lele and Robert Christiansen, "Markets, Marketing Boards, and Cooperatives: Issues in Adjustment Policy," MADIA Working Paper (Washington, DC: World Bank, 1989).

31. See Uma Lele, Robert Christiansen, and Kundhavi Kadiresan, "Issues in Fertilizer Policy in Africa."

32. See Uma Lele and L. Richard Meyers, "Growth and Structural Change in East Africa." See also Uma Lele et al., "Nigeria's Economic Development."

33. See Committee on Foreign Affairs, *Background Materials on Foreign Assistance: Report of the Task Force on Foreign Assistance to the Committee on Foreign Affairs* (Washington, DC: U.S. Government Printing Office, February 1989).

34. See Uma Lele and Ijaz Nabi, eds. *Aid and Development*. The country case studies of Egypt, Pakistan, and Thailand document how U.S. assistance, more than that of other donors, has been determined by the United States' superpower status and bilateral political considerations in Asia and Latin America. John Mellor and William Masters, in their paper, "Bilateral and Multilateral Aid," further discuss the instability of USAID's assistance.

35. See Uma Lele and Manmohan Agarwal, "Four Decades of Economic Development in India and the Role of External Assistance," in Uma Lele and Ijaz Nabi, eds., *Aid and Development*.

36. See Uma Lele and Arthur Goldsmith, "The Development of National Agricultural Research Capacity."

37. Claude Freud's discussion of Senegal, by contrast, makes clear that French assistance has continued to be more intimately linked to the entire gamut of agricultural and rural development policies and institutions in its former colonies (despite a declining share in their total aid receipts as well as their trade) and that its impact has been pervasive and longer-lasting. French training of African nationals, however, has been inadequate and not commensurate with the very high levels of technical personnel supplied.

38. Some have argued that a shock treatment was necessary to get the government to focus on the need to adjust. It was equally necessary, however, to get the donors to focus on Tanzania's weaknesses which they had continued to overlook.

39. See John Mellor, "Food Aid and Development."

40. See Jagdish Bhagwati, "The Tying of Aid," and Hans W. Singer, "External Aid: For Plans or Projects?" in Jagdish Bhagwati and Richard Eckaus, eds., *Foreign Aid* (Middlesex, England: Penguin Books, 1970).

41. Even without tying, donor assistance sometimes provides levels of technology inappropriate for recipient country circumstances. This was the case in the World Bank's (cofinanced) large-scale Bura irrigation project in Kenya, agroprocessing projects in Tanzania, and feeder roads in Nigeria.

42. In general, DAC statistics on technical assistance support the data provided in the other aid studies as well—over 1970-86, for example, the share of technical assistance has ranged from 45-50 percent of total French ODA, from 40-50 percent of total German ODA, and from 30-50 percent of totak U.K. ODA. In the case of Denmark, DAC statistics indicate a somewhat higher share—varying from 30-55 percent—than that suggested by Hanak and Loft's study in this book.

43. See Lele et al., "Cotton in Africa."

44. Although French involvement in West African agriculture has been longer-standing, Freud's study indicates a similar fall in the number of French technical personnel in Senegal. His study, however, refers to total TA personnel, i.e., in all sectors (including teachers) and not just agriculture.

45. Schulz and Heimpel, for example, contend that Germany has recognized the necessity of assisting the Malawian government in financing the recurrent costs arising from sectoral adjustment and project aid. On the other hand, DANIDA's assumption of the recurrent costs of its health and education programs in Tanzania during the recent economic crisis highlights the need for long-term nurturing of sectors where benefits accrue only after substantial lags.

46. See Peter Heller, "The Underfinancing of Recurrent Development Costs," in *Finance and Development*, 16, March 1979, pp. 38-41.

47. See Uma Lele, "Sources of Growth in East African Agriculture."

48. Kennes has briefly discussed the emerging role of nongovernmental organizations in European Community development cooperation and the usefulness of small-scale projects based on direct local participation.