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GROWTH AND STRUCTURAL CHANGE IN EAST AFRICA:  
DOMESTIC POLICIES, AGRICULTURAL PERFORMANCE AND  
WORLD BANK ASSISTANCE, 1963-1986

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and  
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## Note to Conference Participants

This paper is divided into two parts. Part I, which is attached, provides a comparative overview of macroeconomic and sectoral policies and performance in Kenya, Malawi and Tanzania with particular focus on agricultural policies and performance. Part II, which summarizes the World Bank's economic and sectoral analysis and policy advice on the agricultural sector in the three countries as well as lending for agriculture, will be made available shortly.

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## OVERVIEW

Comparisons between Kenya, Tanzania and Malawi are of interest because all three started with somewhat similar initial conditions at Independence but have followed quite different policy paths with very different economic outcomes. Agriculture is nonetheless the most important source of employment, income and exports in all three countries. Not surprisingly, the performance of the agricultural sector and the agricultural policies pursued in each have been closely related to the country's overall economic performance and policies.

Kenya and Malawi have both done quite well in terms of growth of export crop production, but Kenya's performance has been far superior in reconciling growth with equity. Tanzania has done least well on growth of export crops, including those produced by smallholders. Tanzania's efforts to sustain policies to achieve equity have been hampered by the lack of growth of the economy. Malawi's strong export growth has until recently diverted the attention of many observers, including the Bank, from the sources of that growth, including examination of the basic structural policies the government has pursued as well as the technological constraints that have adversely affected Malawi's smallholder sector performance.

The relative performance of each country in the food sector is more difficult to compare due to weak data. Again, however, Kenya appears to be more advanced in promoting the process of technical change in the smallholder sector, especially in maize production.

The breadth of participation in growth has had a profound impact on the process of economic development in each country. Achieving equitable

growth requires the development of a sophisticated network of institutions to service the needs of a large number of small, geographically dispersed producers with diverse resource endowments. Kenya, which admittedly started out with the most favorable institutional base at Independence derived from its large (European) farm structure, cashed in on this base and greatly broadened small farmer access to institutional services. Malawi's historical base of institutions serving a modern European agriculture was narrower than Kenya's. Its subsequent growth has maintained this narrow base of a European estate sector along with an evolving but equally narrow indigenous estate sector in which growth appears to have occurred at the cost of incentives and investment opportunities for the smallholder sector. Tanzania pursued policies aimed at dismantling its historical institutional base, and experimented with many new institutional arrangements, which greatly destabilized the environment for smallholder production.

The structure of agricultural production and its growth is, however, not simply determined by institutional and microeconomic factors but by the quality and the stability of the macropolicy environment within which agricultural production is carried out. Kenya's macroeconomic and sectoral policies were far more conducive to growth than Tanzania's throughout the 1970s. Depending on the particular policy under examination, Kenya and Malawi exchange places in terms of demonstrating superior macroeconomic management -- however, if the interaction of structural (estate-oriented) policies with macroeconomic policies is considered, Kenya was certainly superior to Malawi. Both Kenya and Malawi have in addition provided a more stable institutional environment for development than has Tanzania. Also, external shocks were more adverse in the case of Kenya and Malawi than of Tanzania.

Tanzania's resource base is far more diversified and favourable for growth than that of Malawi and perhaps even Kenya. Land availability, as reflected in land person ratios, is much greater in Tanzania compared to Kenya or Malawi although a small proportion of Kenya's land (4%) is of very high quality.

Per capita ODA levels have, however, been substantially higher in Tanzania than in Kenya and Malawi. While they began to decline from their 1981 peak due to Tanzania's tardiness in adjusting its macroeconomic and sectoral policies, they were still higher than in Malawi and Kenya in 1984 as donors were slow to recognize the adverse effects created by Tanzania's domestic policy environment.

The above arguments lead us to conclude that policy variables explain much of the growth or stagnation that has occurred in the three countries. Similarly, they help to explain how the benefits of growth have, or have not, been distributed.

#### The Role of the World Bank

With the exception of smallholder tea, coffee and dairying in Kenya, there appears to be relatively little connection between where growth has occurred in the agricultural sectors of the three countries and where the Bank has provided about \$994.1 million worth of agricultural project assistance as of 1986. In addition the Bank provided \$440.9 million of assistance in the form of sectoral or structural adjustment lending in the three countries during the 1980 to 1986 period. The fungibility of resources diverted to the estate sector explains this phenomenon in Malawi, where the Bank concentrated its resources in the smallholder sector but in which there has been little

growth. Growth in smallholder tea and coffee in Kenya -- the main source of its agricultural growth -- occurred contrary to the Bank's worldwide advice on tea and coffee expansion to countries producing these commodities (although, paradoxically, the Bank's lending for agro-processing was crucial for expansion of smallholder production in Kenya).

In Tanzania the Bank's 1973 Agricultural Sector Report correctly identified the constraints to growth and stressed the need for a sequential approach to the development of smallholder agriculture that could capture the most obvious sources of growth. However, this approach conflicted with Tanzania's policies. The Bank's policy analysis after that was very constrained by the Bank's reluctance to directly question Tanzanian policies. Its project portfolio was, until about 1981, very conditioned by Tanzanian policies that were not growth-oriented.

By the early 1980s macroeconomic difficulties were reinforced by external shocks in all three countries. These were combined with severe project implementation difficulties being encountered, especially in Kenya and Tanzania, but also in Malawi. This was partly a result of the rapid expansion of Bank lending, as well as that of other donors, to the agricultural sectors of these countries, often for quite marginal activities under conditions of weak planning and institutional capacity.

The World Bank financed a total of 68 agricultural project operations in Kenya, Malawi and Tanzania between 1965 and 1986 -- 26 operations in Kenya with commitments of \$500.50 million; 18 in Malawi with commitments of \$172.69 million and 24 in Tanzania with commitments of \$320.95 million. Of 24 World Bank agricultural project operations completed in the three countries between 1965 and 1986, involving investments of \$266 million, only 14 had positive

rates of return; ten had EERs equal to or exceeding ten percent. Not all these poor realized returns were the result of unanticipated problems. Many marginal investments were approved in support of political objectives of the governments, especially ones concerning interregional income distribution. While taking these concerns into account, it can nonetheless be argued that the projects financed were often not necessarily the most cost effective way of addressing such concerns. This and other evidence suggests that the countries would have been better off if they had not borrowed from the Bank for many of the activities funded. This is more true for Kenya and Tanzania than for Malawi where ERRs for a larger number of projects suggest a more positive impact. However, economic evaluations are done immediately upon the completion of projects. More recent data on Malawian smallholder agriculture raise questions about the long-term effects of projects initially regarded as favourable.

Another noteworthy feature is that until quite recently the Bank's assistance (as well as aid levels) were not positively related to the conduciveness of policies or the level of performance of the three countries. Pressure to lend in the 1970s resulted in indiscriminate growth in lending and weak project portfolios that did not clearly reflect the positive features of the Bank's macroeconomic and sector analysis.

The early 1980s ushered in an era of greater appreciation within the Bank concerning the nature of the interactions between macroeconomic, sector and micro constraints to growth and the need to more directly relate the level and the composition of lending to the macroeconomic and sectoral policy environment. This realization had three consequences: (1) attempts by the Bank to seek macroeconomic and sectoral policy and institutional reforms in

each of the three countries;<sup>1/</sup> (2) cancellation of poorly performing projects; and (3) development of new projects that were geared to improving the capacity of the governments to more effectively deliver basic agricultural services, e.g., research, extension and input supply.

Policy distortions in the three countries have been the least in Kenya although some difficult institutional problems remain with regard to land tenure and the role of the private sector in agro-processing and marketing. The Bank, however, was slow to appreciate the complexity of these issues. This led to an untimely effort at grain marketing liberalization attempted through the second SAL in a period culminating in a severe drought. By 1985, the Bank's policy and project dialogue in Kenya had returned to a more balanced effort to address the problem of priorities in the sector as well as a number of institutional issues of a long standing nature that had repeatedly been confronted in the course of project lending.

The past and future sources of growth in Kenya center on the issue of intensification in tea, coffee, maize, dairying, etc. The Bank would appear to now be on the right track in Kenya in concentrating on improving agricultural research and extension, credit, marketing, etc. in order to to achieve intensification. Nevertheless, the relatively limited diagnosis, through primary data collection and analysis, of the precise constraints to achieving growth and hence the speed of reform may continue to be problems unless the balance of resources devoted to lending versus analysis changes. Secondly, the Bank needs to seriously reconsider its policy advice to Kenya

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<sup>1/</sup> \$440.90 million were provided in the three countries (\$220.9 in Kenya, \$170.0 in Malawi and \$50.0 in Tanzania) in support of macroeconomic and sectoral reform.

concerning the development of coffee and tea. The policy has been prompted by concerns about limited world market prospects for tea and coffee and the collective good of beverage producing countries whose interests are served by limiting production. However, this advice has not served Kenya well and has been inconsistent with the realization of a dynamic comparative advantage. Equally important, the treatment of risks has been quite weak -- including those related to the non-realization of the Bank's price forecasts in the estimation of economic benefits. At a more general level the issue of the prospects for primary commodities produced in Africa and its implications for country and project specific advice needs serious review by the Bank.

The effects of macro and sectoral distortions on agricultural performance and on the Bank's portfolio have been the greatest in Tanzania. The Bank was tardy in taking into consideration the importance of the policy environment for the size and the content of its lending program and in several ways reinforced the government's worst tendencies through project assistance i.e., support for the government's import substitution industrialization strategy and its excessive focus on equity. These problems were identified in the Bank's 1983 Agricultural Sector Report, which repeated many of the themes of the 1973 report. Once recognized, the difficulties of the large project portfolio combined with the government's slowness in responding to these problems, brought the Bank's agricultural lending activity to a virtual standstill from about 1983 to 1986 when the government began to reconsider structural reform.

In Malawi, on the other hand, the Bank, through the SAL process and several new projects in agricultural research and fertilizer distribution, has since the early 1980s helped the government to correct some of the more

important policy distortions -- those that favoured estates at the cost of smallholders in the 1970's. On other sectoral policy issues which will have profound long term effects on development, e.g., the land issue, the speed of removal of fertilizer subsidies and the restructuring of ADMARC (the agricultural marketing parastatal), the Bank in our view needs to go further in analysing the basic sources of Malawi's structural problems and needs to help develop a long term strategy of development that will address the question of how to better reconcile growth with equity. In this analysis the political economy aspects of policy reform need far greater emphasis than is true of the more narrowly defined economic analysis usually conducted by the Bank.

The most important conclusions of our research concern the recognition of the Bank's obvious comparative advantage in policy analysis and in the articulation of long-term country specific development strategies in support of which donor assistance and domestic resource mobilization can be organized through aid coordination. However, we observe a pattern in the Bank's operations of insufficient analysis of specific constraints to long term development, including consideration of the implications for sequencing and phasing of policy reforms and investments, before reform packages are put in place. This has been accompanied by the lack of a long term view of development, one that in particular places greater emphasis on human capital/institutional development in the recipient countries relative to the emphasis phased on financial resource transfers. There is also inadequate effort at aid coordination in which the comparative advantages of other donors to undertake specific activities in support of a long term strategy are explicitly recognized.

The issues of donor comparative advantage and lack of analysis of specific constraints are closely related. Lack of attention to critical constraints is due in part to the insufficient attention paid to micro level factors that potentially might inhibit the success of investments. This in turn stems from limited analytical capacity in recipient countries with which to undertake the necessary microanalysis. Thus, donors need to devote greater attention to building up such analytical capacity. While this is an area where the Bank does not have a particular comparative advantage, it needs to both recognize and encourage the efforts of those donors who do possess such comparative strengths.

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Uma Lele  
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INTRODUCTION

This paper on three East African countries, Kenya, Malawi and Tanzania, draws upon the results of a wider study of the role of foreign assistance in African agricultural development, which is in turn a component of a major World Bank research project, "Managing Agricultural Development in Africa" (MADIA).<sup>1/</sup> The focus of the MADIA study on agriculture is the result of the wide recognition among African governments and donors of agriculture's central importance in overall economic development and their acknowledgment that past failures in Africa have been largely a result of the failure of the agricultural sector.

The foreign assistance component of MADIA consists of case studies that examine the experience of eight donors, including the World Bank, in providing assistance to agriculture in six African countries since their Independence.<sup>2/</sup> This synthesis paper on three East African countries

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<sup>1/</sup> The other two major components of MADIA consist of: 1) a study of the politics of agricultural policy and 2) a study of the relationship between agricultural policies and performance.

<sup>2/</sup> Other donors are USAID, SIDA, DANIDA, ODA, EEC, W. Germany (BMZ) and France.

summarizes the World Bank's experience in Kenya, Malawi and Tanzania, drawing on detailed reviews of the Bank's activities in each.<sup>1/</sup> It draws on the World Bank's Tanzania Agricultural Sector Report prepared under Uma Lele's direction in 1981-83, and subsequent comparative work on Tanzania, as well as reports prepared for the MADIA study on the World Bank's role in Kenya and Malawi's agricultural development.<sup>2/</sup>

The data on macro economic structure and performance were developed by Jaw Ansu. Those on agricultural performance and policies for Kenya were developed by Michael Westlake and Kevin Cleaver, Chandra Ranade for Malawi, and Uma Lele and Ellen Hanak for Tanzania.

The analysis of the Bank's role has involved a detailed review of the Bank's formal and informal economic and sector work as reflected in Basic Economic Reports, Annual Economic Memoranda, Agricultural Sector Reports and various project related documents, including Staff Appraisal Reports (SARs), Supervision Reports, Project Completion Reports (PCRL) and Project Performance and Audit Reports (PPARs). Consultation with the concerned Bank's operational staff has also been an equally important independent source of data and analysis.

Field investigations were carried out by Uma Lele in April 1985, January 1986 and July 1986, involving discussions with co-financers of Bank

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- 1/ The other three countries included in the MADIA study are Nigeria, Cameroon and Senegal.
- 2/ Uma Lele and L. Richard Meyers, "Agricultural Development and Foreign Assistance: A Review of the World Bank's Experience in Kenya"; and J. G. Kydd and N.J. Spooner, "The World Bank's Analysis of Malawian Agriculture: Changing Perspectives, 1966 to 1985". (Drafts).

projects (in particular CDC, ODA, and USAID) and interviews with Kenyan and Malawian government officials and farmers. Lele's investigations in Tanzania extended from 1972 to 1974 and from 1977 to 1982. During 1979-82 she was responsible for the Bank's agricultural sector analysis and lending operations in Tanzania. The study also draws on other research on each of the countries by Bank staff and outside researchers.<sup>1/</sup> The study would not have been possible without the cooperation and encouraging support of the Bank's operational staff and the governments concerned.

While the analysis presented here is necessarily historical in approach, it is intended to be more than just a retrospective treatment of the Bank's involvement in the agricultural sectors of the three countries. Its objective in tracing past developments is to try to understand the relative roles of domestic policies and the Bank in the agricultural development of the three countries over the past two decades and then to explore priorities for future government policies and donor (especially World Bank) assistance. Thus, the paper examines in detail the nature and patterns of agricultural growth in Kenya, Malawi and Tanzania and then reviews the contribution of the World Bank to the process of agricultural growth in each of the three countries.

The process of agricultural growth is examined in the paper from a specific point of view, derived from the work of a number of agricultural

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<sup>1/</sup> For instance, more than 500 Ph.D. theses on MADIA countries have been written in the U.S; a number are on agriculture -- 43 deal with Kenya, 20 are on Tanzania and 4 are on Malawi. These have been drawn upon extensively as they often contain valuable detailed information on specific problems. We have also drawn on the publications of FAO, ILO, IFPRI and the Institutes for Development Studies in Sussex and Nairobi as well as those of scholars in MADIA countries.

economists who have been concerned with the process of structural transformation.<sup>1/</sup> These economists have explored patterns of agricultural growth which simultaneously created increased employment and incomes while expanding output. They recognized that at early stages of development there are diminishing returns in agriculture under traditional technologies. However they point out how efficiency increasing reallocation of resources in agriculture which favours the increased use of labor in agriculture output growth shifts effective demand outwards, while at the same time achieving rapid growth. Further that this increased effective demand has important growth linkage effects which make the process of development self-sustaining. This paper therefore examines the policies and performance of the three East African countries in their post- Independence period from the viewpoint of the extent to which they have achieved equitable growth and have created growth linkages.

The process of agricultural growth has also been considered from the viewpoint of intensification, which is defined in three different and inter-related ways: (i) a shift from low to high value crops on any given land; (ii) increase in yields per ha. of any given crop; and (iii) a geographical shift in production of crops from areas of poor land quality to those of higher land quality. The policies affecting agriculture in each country are evaluated from this perspective.

Lastly, it is hard to review relationships between donors and the recipients of aid without seeming to be second guessing the protagonists with

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<sup>1/</sup> See J. W. Mellor, The New Economics of Growth: A Strategy for India and the Developing World. Ithaca: Cornell University Press, 1976; B. F. Johnston and P. Kilby, Agriculture and Structural Transformation: Economic Strategies in Late Developing Countries. New York: Oxford University Press; U. Lele and John W. Mellor, "Technical Change, Distributive Bias and Labor Transfer in a Two Sector Economy," Oxford Economic Papers, 33, 3 (November, 1981): 426-441.

the benefit of hindsight. To some extent this is unavoidable if lessons are to be learned for the future. Nevertheless the study devoted considerable effort to identifying the information that was available at the time decisions were made. It discusses how this information was (or was not) applied, and uses decisions and outcomes to suggest policy, analytical, procedural, staffing and management implications for Bank/government interactions in the future.

### Organization of the Paper

The paper is divided into two parts. Part I provides a comparative overview of key macroeconomic indicators as well as the post-Independence structure and performance of agriculture in the three countries. It also briefly summarizes the effects of external factors, including terms of trade effects, on economic growth. The cumulative effects of overall foreign aid levels are briefly reviewed, with particular attention to the relative contribution of the World Bank. Lastly, the domestic agricultural policies of the three countries that have contributed to the agricultural performance of each are discussed.

Part II describes the evolution of the Bank's assessment of the agricultural potential, performance and policies of each country. It then reviews the nature of policy advice provided by the Bank to each. A description of the Bank's agricultural lending by subsector follows in which lessons learned by the Bank and the governments are identified as well as some that might still be learned.<sup>1/</sup>

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<sup>1/</sup> Development assistance considered includes both World Bank loans and more concessional funding provided by IDA credits.

PART I

A COMPARATIVE OVERVIEW OF THE THREE COUNTRIES

I. STRUCTURE AND PERFORMANCE OF THE AGRICULTURAL SECTORS OF  
KENYA, MALAWI AND TANZANIA

A. Initial Conditions at Independence

All three countries are former British colonies (or protectorates), have relatively similar ecological conditions and grow many of the same crops. At Independence they inherited similar agricultural structures, consisting of a large number of small African farms and a modern agricultural sector operated by colonial settlers. Of the three countries, Kenya had the most favorable conditions in terms of the size and development of its modern, largely European agricultural sector, and of its economy, physical infrastructure and institutions. Both Kenya and Tanzania enjoy good ports, while Malawi is landlocked and has faced serious transportation difficulties since the late 1970s. In 1965 Kenya's per capita income of \$103 in 1965 was the highest followed by Tanzania's \$77 and Malawi's \$63. Kenya and Tanzania had similar size populations (9.5 and 11.7 million in 1965, respectively) compared to Malawi's 3.9 million.

B. Agriculture's Role in Overall Economic Development and the Process  
of Structural Transformation

Agriculture accounted for quite similar employment shares (84 to 91 percent) in the three economies at Independence in the mid-1960s (Table 1) and by 1980 the percentages were still quite high (78% in Kenya, 86% in Malawi and

Table 1  
EMPLOYMENT SHARES BY SECTOR (PERCENT)

YEAR	KENYA	MALAWI	TANZANIA
<b>Agriculture</b>			
1960	86.0	92.0	89.0
1965	84.1	90.6	87.6
1970	82.0	89.0	86.0
1975	80.1	87.6	84.6
1980	78.0	86.0	83.0
<b>Industry</b>			
1960	5.0	3.0	4.0
1975	5.9	3.5	4.5
1970	7.0	4.0	5.0
1975	8.4	4.5	5.5
1980	10.0	5.0	6.0
<b>Other Sectors</b>			
1960	9.0	5.0	7.0
1965	10.0	5.9	7.9
1970	11.0	7.0	9.0
1975	11.5	7.9	9.9
1980	12.0	9.0	11.0

Note: Industry is defined here as Manufacturing, Mining and Quarrying, Construction, and Public Utilities (electricity, water, gas, sanitary services).

Source: World Bank, World Tables, Vol. II, 1983.

83% in Tanzania). In a Kuznetzian "normal" pattern of growth, agriculture's share in a country's GDP tends to be high early in the development process and to fall during later stages. Surprisingly, during the 1967-73 period agriculture already contributed a relatively low 34.3% to Kenya's GDP, compared to 44.4% in Malawi and 40.8% in Tanzania (Table 2), once again reflecting Kenya's more advanced stage of structural transformation. By the 1982-1984 period, however, agriculture's share had fallen slightly to 32.6% in Kenya and 39.8% in Malawi, but had risen to 51.6% in Tanzania. Meanwhile, industry's share in GDP, which was around 12% during 1967-1973 in each country, had risen by 1982-84 to 15.6% in Kenya and 11.8% in Malawi, while falling to 9.7% in Tanzania. Tanzania's Basic Industrial Strategy of the 1970s (which strongly discriminated against agriculture -- see Section IV.C.3.F below) actually had the reverse of its intended effect: it raised agriculture's share in GDP and reduced industry's.

The share of trade in GDP was initially also similar in the three countries (Table 3), in which agricultural exports dominated. Trade shares amounted to 58.5% in Kenya, 51.2% in Malawi and 53.8% in Tanzania for 1967-1973 with agriculture's share in trade being over 90% in Malawi and about 80% in Tanzania (Table 4). In Kenya, however, it had fallen over time, from 74.7% during 1967-73 to 56.6% in 1979-81. By 1974-1978, trade shares had risen to 67.5% and 56.9% in Kenya and Malawi respectively, reflecting increases in agricultural export volumes as well as prices. In Tanzania, however, trade shares had declined to 48.5% despite the relatively more favorable movements in its barter terms of trade compared to Kenya and Malawi (Figure 1). Tanzania's stagnancy or decline in exports is reflected in its much poorer income terms of trade (Figure 2). All three countries registered falling

Table 2  
GDP DECOMPOSITION BY SECTORS  
(PERCENT OF GDP)

YEAR	KENYA	MALAWI	TANZANIA
1967-73			
Agriculture	34.3	44.4	40.8
Industry *	12.2	11.0	11.5
(Manufacturing)	11.8	11.0	9.9
(Mining)	0.4	0.0	1.6
Infrastructure**	15.0	11.6	14.5
Public Administr. & Defense	14.9	11.7	11.3
Others***	23.6	21.3	21.9
1974-78			
Agriculture	37.3	40.8	45.7
Industry	12.1	11.4	11.1
(Manufacturing)	11.9	11.4	10.5
(Mining)	0.3	0.0	0.6
Infrastructure	12.8	12.6	12.1
Public Administr. & Defense	14.3	8.7	11.4
Others	23.5	26.5	19.7
1979-81			
Agriculture	33.0	38.0	51.5
Industry	13.3	11.8	11.0
(Manufacturing)	13.0	11.8	10.4
(Mining)	0.2	0.0	0.5
Infrastructure	14.2	13.4	10.5
Public Administr. & Defense	14.8	9.8	9.9
Others	24.7	27.0	17.1
1982-84			
Agriculture	32.6	39.8	51.6
Industry	15.6	11.8	9.7
(Manufacturing)	15.4	11.8	9.3
(Mining)	0.2	0.0	0.4
Infrastructure	9.1	12.0	10.2
Public Administr. & Defense	9.9	11.0	11.3
Others	32.8	25.4	17.2

\* Industry is defined as Mining (fuel and other minerals) and Manufacturing.

\*\* Infrastructure is defined as Construction and Transport and Communication.

\*\*\* Others includes Trades, Bank/Insurance/Real Estate Services and Unspecified.

Sources: World Bank, EPD for data up to 1983 for Kenya and Malawi, to 1982 for Tanzania. 1984 data are obtained from CEMA for Kenya and Malawi. Unpublished data obtained from the Bank of Tanzania and other Tanzania Authorities for 1983-1984 data.

Table 3  
TRADE SHARES IN GDP\*  
(PERCENT OF CURRENT VALUES)

	KENYA	MALAWI	TANZANIA
<u>Share of Exports**</u>			
1967-73	28.5	19.7	25.6
1974-78	32.0	22.8	19.5
1979-81	26.8	25.2	14.9
1982-84	26.5	20.2	10.9
<u>Imports**</u>			
1967-73	30.0	31.5	28.2
1974-78	35.5	34.1	29.0
1979-81	35.6	39.1	26.2
1982-84	29.3	27.3	22.7
<u>Share of Trade</u>			
1967-73	58.5	51.2	53.8
1974-78	67.5	56.9	48.5
1979-81	62.4	64.3	41.1
1982-84	55.8	47.5	33.6
<u>Share of Net Exports</u>			
1967-73	-1.5	-11.8	-2.6
1974-78	-3.5	-11.3	-9.5
1979-81	-8.8	-13.9	-11.3
1982-84	-2.8	-7.1	-11.8

\* GDP is at market prices.

\*\* Both Exports and Imports include goods and non-factor services.

Source: World Bank, EPD for data up to 1983 for Kenya and Malawi, to 1982 for Tanzania, 1984 data are obtained from CEMs for Kenya and Malawi. Unpublished data obtained from the Bank of Tanzania and other Tanzania authorities for 1983-1984 data.

Table 4  
COMPOSITION OF TRADE \*  
(PERCENT)

YEAR	KENYA	MALAWI	TANZANIA
<b>A. EXPORTS</b>			
1967-73			
Agriculture	74.7	97.0	78.2
(Food)	60.0	91.7	48.2
Manufacture	12.5	2.7	13.2
Fuels	12.0	0.1	7.8
Metals and Minerals	0.7	0.2	0.8
1974-78			
Agriculture	66.1	95.5	84.3
(Food)	54.5	93.5	58.0
Manufacture	13.1	4.4	11.1
Fuels	19.9	—	4.1
Metals and Minerals	0.9	0.1	0.5
1979-81			
Agriculture	56.6	93.8	79.5
(Food)	48.8	92.2	60.7
Manufacture	12.5	6.2	14.1
Fuels	28.5	--	2.7
Metals and Minerals	2.4	--	3.7
1982-84**			
Agriculture	61.9		
(Food)	55.4		
Manufacture	11.8		
Fuels	24.0		
Metals and Minerals	2.3		
<b>B. IMPORTS</b>			
1967-73			
Agriculture	9.5	15.3	9.3
(Food)	7.4	14.2	8.4
Manufacture	78.4	76.3	79.8
Fuels	10.8	7.1	9.4
Metals and Minerals	1.3	1.3	1.6

Table 4 (continued)

YEAR	KENYA	MALAWI	TANZANIA
1974-78			
Agriculture	8.8	9.9	15.2
(Food)	6.7	9.1	14.0
Manufacture	66.3	76.8	68.4
Fuels	23.5	11.8	14.4
Metals and Minerals	1.4	1.5	2.0
1979-81			
Agriculture	8.2	9.1	9.3
(Food)	2.0	8.3	8.3
Manufacture	58.8	73.9	67.3
Fuels	31.7	15.6	21.9
Metals and Minerals	1.3	1.4	1.5
1982-84**			
Agriculture	10.5		
(Food)	8.6		
Manufacture	51.5		
Fuels	6.7		
Metals and Minerals	1.3		
Food Imports Per Capita (in constant 1967 US\$)			
1967-73	2.3	2.5	1.5
1974-83	2.6	1.7 (74-81)	2.3 (74-81)

\* Legend: The Standard International Trade Classification (sitc) code has been used:  
 Agriculture SITC (0+1+2+4-27-28)  
 (Food) SITC (0+1+22+4)  
 MANUFACTURE SITC (5+6+7+8+9-68)  
 Fuels SITC 3  
 Metals and Minerals SITC (27+28+68)  
 Total Merchandise Exports, Imports = Agriculture+Manufacture+Fuels+Metals and Minerals.

\*\* 1982-84 figures are for 1982-83 for Kenya and are not available for Malawi and Tanzania.

Sources: The World Bank Trade System (EPI) for trade data. IMF - International Financing Statistics (1985) for population.

Figure 1  
terms of trade index  
(1972 base)

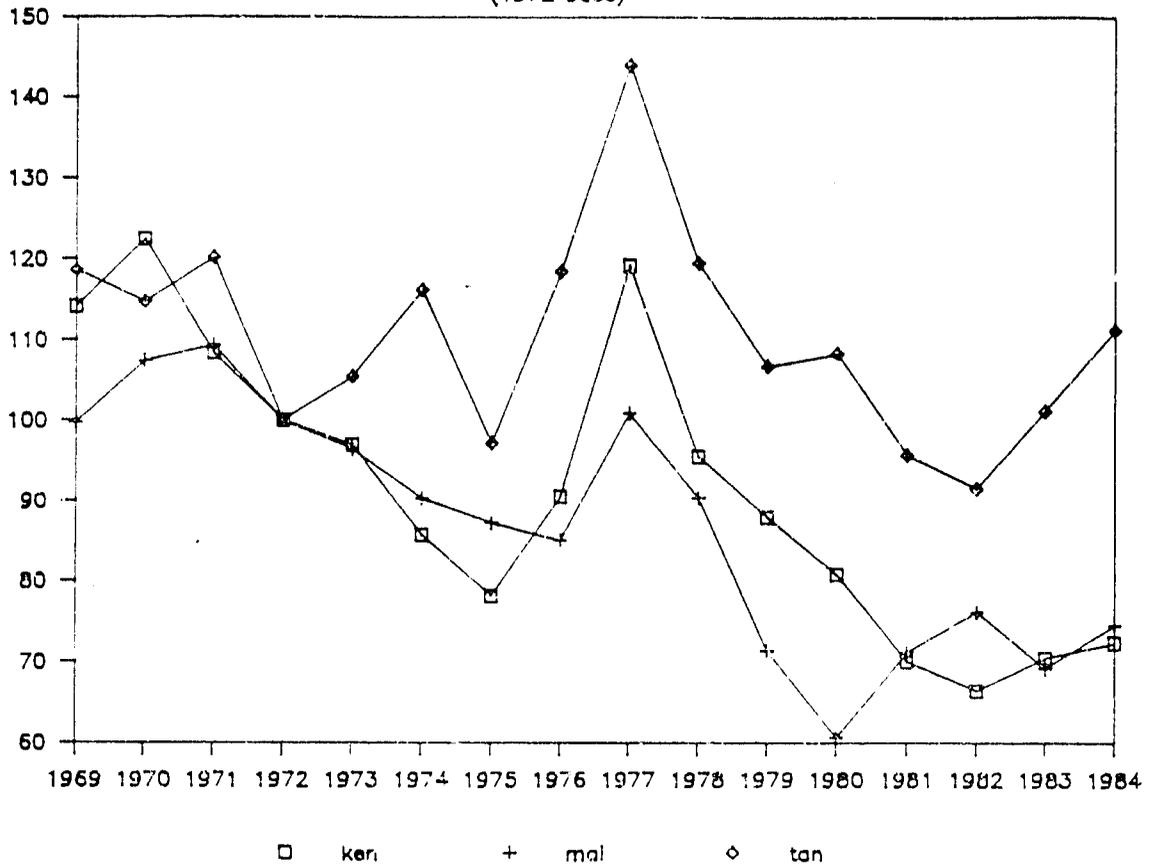
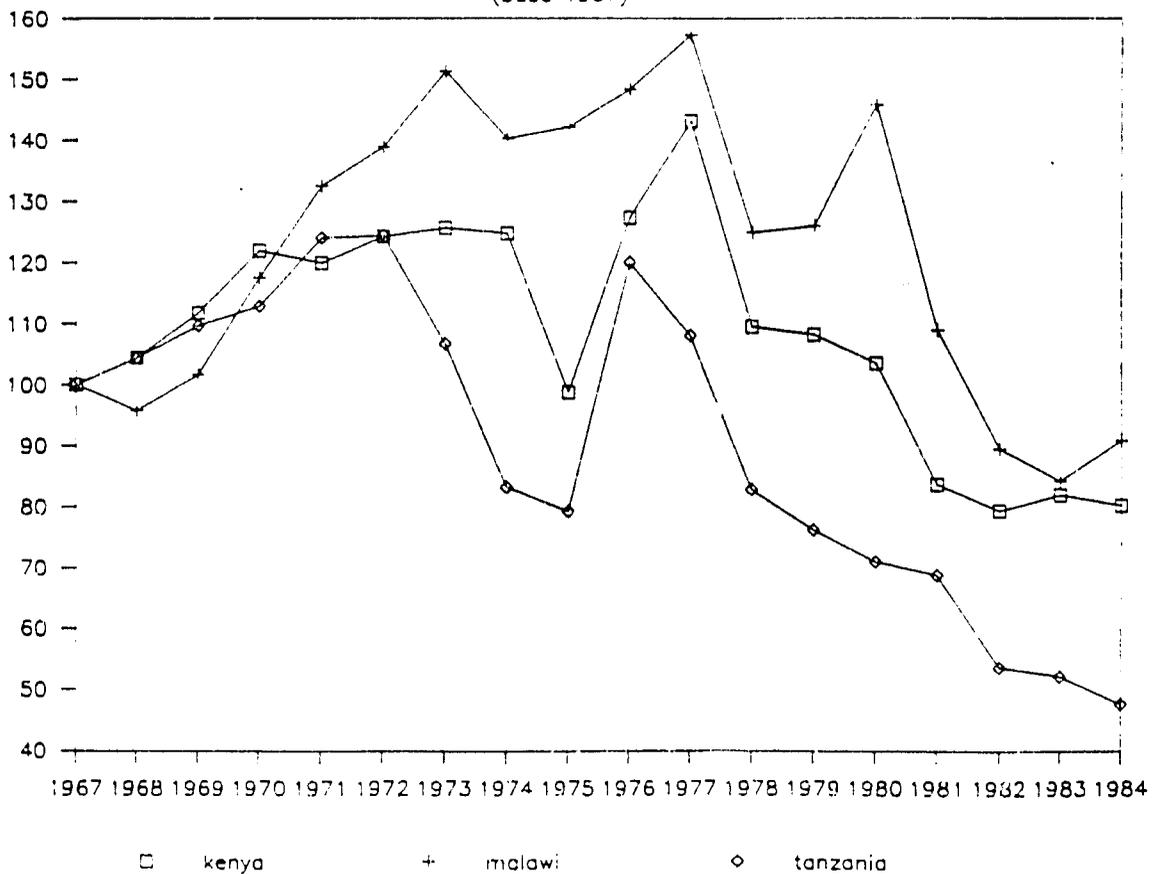


Figure 2  
income terms of trade  
(base 1967)



Source: IFS (IMF), 1985.

trade shares in the 1982-84 period. For Kenya and Malawi the terms of trade declines were far greater relative to the 1972 base, than for Tanzania, and indeed during the 1983 and 1984 period Tanzania's terms of trade had recovered from a low of 1982, whereas in Kenya and Malawi they continued to remain depressed. Tanzania's trade share had fallen to 33.6% by 1982-1984, over 20 points below its 1967-1973 level, as volumes for a number of its agricultural exports (sisal, cashews, tobacco) stagnated or declined.

Table 3 also shows that Kenya has had the best record for net exports, which were -1.5% of GDP in 1967-73, dropped to -8.8% in 1979-81 and rose to -2.8% in 1982-84. Tanzania's net exports were -2.6% of GDP in the 1967-73 period and worsened to more than -11% after 1979. Malawi has consistently had much larger negative net exports (slightly over -11% of GDP) than Kenya or Tanzania until 1982-84, when its negative balance improved to -7.0%. Current account deficits in the three countries showed roughly similar patterns to those of net exports. The reasons for the differential behaviour of the trade shares and net exports are better understood through the more decomposed picture of export and food crop performance presented below.

### C. Agricultural Performance

#### 1. Export Crops

Coffee and tea are the two major export earners in Kenya. The share of coffee ranged between a quarter to a half of agricultural exports, depending on international prices, and averaged 20-28% of total exports in Kenya during the 1970 to 1985 period. The share of tea in agricultural exports ranged between 13% and 36%. On average, tea constituted 12-19% of total exports. Coffee and tea export volumes increased at 3.8% and 7.5%

respectively in the 1970 to 1985 period (Table 5). Kenyan exports of horticultural crops also grew rapidly (12.7%) between 1970 and 1985 -- albeit from a small base.

Smallholders have played an active role in Kenyan export crop production through a shift in cropping patterns to higher value crops. The growth rate of smallholder coffee production was 6% compared to 1% for estates leading to an increase in the share of smallholder coffee production from 35% (60% of total area) in 1964 to around 60% in the 1980s (75% of area). Smallholder tea production increased at an impressive 13.5% compared to the 5.5% growth in volumes from estates and the share of smallholder tea production (and area) increased from around 5% in the mid-1960s to 48% in 1985 (65% of total area). Smallholder sugar production grew at 16.9% and estate production at 5.3% with the smallholder share of sugar growing from 11% of the total in 1973 to 48% in 1984. Much of the impressive growth in the volume of horticultural crop exports in 1970-85 came from smallholders. The smallholder share of marketed maize sales, which was negligible at Independence, is currently 45%. Smallholder dairying production increased at 8.5% with the smallholder share increasing to 50% of the country's milk (to which smallholders contributed little at Independence). Almost all the marketed production of rice, pulses, cotton and pyrethrum comes from smallholders.

In sharp contrast to Kenya, tobacco, tea and sugar, the three important exports of Malawi, have all been estate crops, with tobacco earnings ranging from 43% to 51% of the total earnings during 1970 and 1985, those of tea between 15% and 22% and sugar rising from a low base of 1.7% in 1970 to 17% during 1979-81, but then declining to 9.3% during the 1982 to 1985 period.

Table 5  
 STRUCTURAL CHANGE AND GROWTH: AGRICULTURAL PERFORMANCE IN KENYA, MALAWI AND TANZANIA  
 1970-1985 <sup>a/</sup>  
 (Growth Rates in Volumes)

Exports	Production		Food Production					
<u>Kenya</u>		<u>Kenya</u>	<u>Malawi</u>	<u>Maize</u> <sup>d/</sup>				
Coffee	3.8	Coffee	Tea	Production	Purchases	Sales	(Net Sales)	
Tea	7.5	- Smallholder	- Estate	Kenya	3.9	2.4*	9.2	(6.8)
Horticultural crops	12.7	- Estate	Tobacco	Malawi	1.5*	19.1	23.7	(4.6)
		Tea	- Smallholder	Tanzania	2.1	1.1*	1.9	(0.8)
		- Smallholder	- Estate - Burley					
<u>Malawi</u>		- Estate	Estate - Flue-	<u>Food Imports</u>				
Tobacco		Sugar	cured	Kenya	6.4			
- Burley <sup>b/</sup>	14.1	- Smallholder	Sugar	Malawi	3.1			
- Flue-cured <sup>b/</sup>	9.2	- Estate	- Estate	Tanzania	3.0*			
Tea <sup>b/</sup>	5.2	Dairying	Rice	<u>Food Aid (Total Cereals)</u>				
Sugar <sup>b/</sup>	28.1	- Smallholder	- Smallholder	- Kenya	43.1 <sup>e/</sup>			
Groundnuts <sup>c/</sup>	-13.2	- Large Farm	Groundnuts	- Malawi	28.6			
Cotton <sup>c/</sup>	-12.5	Rice	- Smallholder	- Tanzania	23.5			
		- Smallholder	Cotton					
		- Smallholder	- Smallholder					
<u>Tanzania</u>		<u>Tanzania</u>						
Coffee	0.8*	Coffee						
Cloves	-2.7*	- Smallholder						
Tobacco	-4.7*	- Estate						
Cotton <sup>c/</sup>	-2.3	Tea						
Sisal	-5.9	- Smallholder						
Cashewnuts <sup>c/</sup>	-6.8	- Estate						
Tea	1.9	Tobacco						
		- Smallholder						
		- Estate						
		Sugar						
		Cotton						
		- Smallholder						

\* Statistically insignificant (all other figures significant at the .05 level).

<sup>a/</sup> See accompanying "Years and Sources for Table 5." In some cases data are not available for the complete 1970-85 period.

<sup>b/</sup> Estate crop.

<sup>c/</sup> Smallholder crop.

<sup>d/</sup> Purchases and sales refer to "official" purchases and sales. "Net sales" are sales minus purchases.

<sup>e/</sup> Started from a very low base during 1970 to 1978 and then dramatically increased in 1979.

YEARS AND SOURCES FOR TABLE 5

Export Volumes

Country	Years	Source
KENYA	1970-1985	Economic Surveys
MALAWI	1970-1985	ADMARC
TANZANIA		
Coffee	1970-1981	1970-1978: Min. of Agriculture; 1979-1981: IBRD
Cloves	1970-1981	IBRD
Tobacco	1970-1985	1970-1978: Min. of Agriculture; 1979-1985: MDB
Cotton	1970-1981	1970: Min. of Agriculture; 1971-1975: MDB; 1976-1981: IBRD
Sisal	1970-1981	MDB
Cashewnuts	1970-1985	1970-1971: Min. of Agriculture; 1972-1985: MDB
Tea	1970-1984	1970-1977: Internat'l Tea Committee; 1978-1984: USDA

Production Volumes

Country	Years	Source
KENYA		
Coffee	1970-1985	Kenya Coffee Board
Tea	1970-1985	Kenya Tea Development Authority
Sugar		
--Smallholder	1973-1985	Economic Surveys
--Estate	1970-1985	Economic Surveys
Dairying	1970-1985	Data compiled by I. R. McDonald
Rice	1970-1982	Kenya Statistical Abstract
Cotton	1970/71-1984/85	Cotton Seed and Lint Marketing Board
MALAWI	1970-1985	ADMARC
TANZANIA		
Coffee	1970-1985	1970-1972: EEC; 1973-1985: MDB
Tea	1970-1985	MDB
Tobacco	1979-1985	MDB
Sugar	1970-1985	MDB
Cotton	1971-1984	MDB

Maize Production

Country	Years	Source
KENYA		
Production	1970-1984	NCPB
Purchases & Sales	1970-1985	NCPB
MALAWI		
Production	1970-1984	FAO
Purchases	1970-1985	ADMARC
Sales	1972-1985	ADMARC
TANZANIA		
Production	1970-1984	FAO
Purchases	1970-1985	MDB
Sales	1970-1983	MDB

Food Imports

1970-1985 World Bank Trade System (EPD) and Country Economic Memoranda

Food Aid

Country	Years	Source
KENYA	1970/71-1984/85	FAO, "Food Aid in Figures", December 1983
MALAWI	1970/71-1983/84	FAO, "Food Aid in Figures", December 1983
TANZANIA	1970/71-1984/85	FAO, "Food Aid in Figures", December 1983

Production of burley tobacco increased by 15.4% annually, flue cured tobacco by 10.4%, tea by 4.5% and sugar by 14.7%. Groundnuts (the only crop grown by smallholders), which was previously a major export generating about 11% of total export earnings in the 1970-73 period, declined to 1.2% in the 1982-85 period. Groundnuts export volumes declined by 13.2% annually and the production of cotton (another smallholder crop) also declined by 12.5% annually.

Tanzania has had a much more diversified export base compared to either Kenya or Malawi with coffee contributing 23% to 35% of total export earnings during the 1970 to 1985 period, but with other important exports either stagnating or declining in shares, e.g., cloves and tobacco remained steady at around 10% and 4% of earnings, respectively, but cotton declined from 20% to 14%, sisal from 11% to 6%, cashewnuts from 9% to 4%, etc. Only coffee and tea export volumes grew in Tanzania, but by only 0.8% and 1.9% respectively. Export volumes of all other major crops showed a decline e.g., cloves annually by 2.7%, and tobacco by 4.7% (both of these albeit at statistically insignificant levels), cotton by 2.3%, sisal by 5.9% and cashew nuts by 6.8%.

Unlike in Malawi where estate crop production showed a sharp rise, in Tanzania it declined even more sharply than agricultural exports leading to an increased share of smallholders in export crop production, if only by default. For example, estate coffee production declined by 4.1% annually whereas smallholder production increased by 2.3% annually. Smallholder tea production increased by 13.7% annually albeit from a small base, whereas estate production increased only by 1%. Both smallholder and estate tobacco production declined by 4.8% and 7.5% annually from 1979 on. Sugar production increased only by 0.8%.

## 2. Food Production

The comparative performance in food production in the three countries is of interest from the viewpoint of its effect on welfare as well as balance of payments. However, the relevant data from FAO and the respective ministries of agriculture are relatively less consistent than in the case of export crops. With the exception of Malawi we have relied on the data from the ministries of agriculture, which appear to be internally more consistent, although they are based on subjective reporting systems whose validity is not very certain.

We focus on maize as the most important foodcrop in the three countries. Kenya shows a growth rate of 3.9% annually between 1970 to 1985, compared to 2.1% for Tanzania and only 1.5% for Malawi (Table 5). While Kenya appears to have done better, other related indicators of maize performance need to be considered to make a firm judgement given the paucity of reliable production data. From this viewpoint, Kenya's food imports show a faster rate of growth (6.4% annually) compared to Tanzania's (3.0%) and Malawi (3.1%). There are three possible explanations for this. First, food imports volumes are greatly influenced by the incidence of droughts. Kenya's largest imports took place in 1985, i.e., at the end of the period under consideration whereas Tanzania's imports were great in 1974 and 1975. The timing of these increases affects the growth rates.<sup>1/</sup> Second, food aid data show higher receipts for Tanzania (1,647 million of cereals in the 1970/71 - 1984/85 period), compared

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<sup>1/</sup> Also, the greater year to year fluctuations in Tanzania are reflected in a higher year to year grow rate average than for the other two countries.

to Kenya (1,058 m.ton) and Malawi (only 37,000 tons). Although rates of cereal food aid once again show higher growth rates for Kenya (43.1%) compared to Malawi (28.6) and Tanzania (23.5%), albeit from a small base, Tanzania also received more skim milk powder than Kenya which had a much more thriving domestic dairying industry.<sup>1/</sup>

Thirdly, higher food imports may be a result of more rapid growth in domestic demand, which would be a function of urbanization and overall population as well as income growth.<sup>2/</sup> Kenya's population growth rate has been higher than Tanzania's or Malawi's. However, its income growth was also greater and more broadbased than the other two countries, supporting Mellor's observation that the 29 most rapidly growing developing countries have experienced the most rapid rate of growth in food imports.<sup>3/</sup> This point also applies to the supply of maize offered to official channels by producers. Because much of the growth in Kenya resulted from the settlement of small farmers on formerly European lands, the productivity per ha of maize increased. However, marketed surpluses did not increase commensurately due to increased domestic demand.<sup>4/</sup>

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<sup>1/</sup> Needless to say, Kenya's food import capacity was greater than that of Tanzania or Malawi. Its food imports ranged from 6.5% to 22% of exports, Malawi's between 9.8% and 23.8% and Tanzania's fluctuated from a low of 6.8% to a high of 42% of export earnings in 1975.

<sup>2/</sup> Reliable estimates of urbanization have not been available. However, there appears to be no significant difference in the rate of urbanization in the three countries.

<sup>3/</sup> J. W. Mellor and B. W. Johnston, "The World Food Equation: Interrelations Among Development, Employment and Food Consumption," Journal of Economic Literature, 22 (June 1984): 531-574.

<sup>4/</sup> See Chapter VI, Lele and Meyers, op cit.

Data on "officially" marketed surpluses and official maize sales allow determination of the extent of net official sales, which provides additional insights concerning the growth of domestic food production, performance and consumption. In Kenya growth of volumes sold during 1970 to 1985 to the official monopsonist National Cereals and Produce Board (NCPB) were 2.4% (a statistically insignificant growth rate) and maize sales by NCPB were 9.2% annually, or a growth in net sales of 6.8% (see Table 5). In contrast, in Tanzania official maize purchases by the National Milling Corporation (NMC) increased by only 1.1% annually and sales by 1.9%, reflecting a growth rate of net sales of 0.8% annually.

In Malawi, on the other hand, ADMARC purchases increased by an unprecedented annual rate of 19.1% annually whereas ADMARC sales increased by 23.7% annually suggesting a growth of net sales of 4.6% annually. It is thus evident that of the three countries Kenya has had the highest rate of growth of net sales, even in the face of the highest growth rate of maize production, suggesting increased dependence on the market by the Kenyan population.

The growth of ADMARC's maize purchases has baffled many observers in view of the low growth rate of maize production, although they seem to be less puzzling when considered in relation to sales. Some observers have argued that growing official maize purchases reflect an element of distress in the post harvest season resulting from the lack of growth of agricultural incomes and purchasing power among the vast majority of small producers.<sup>1/</sup>

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<sup>1/</sup> See, for instance, "Food Pricing Policies and their Implications on Nutrition," Ministry of Agriculture, undated.

Critics of Malawi, including government officials, point to the high level of malnutrition and infant mortality -- one of the worst in Africa -- in support of this conclusion.<sup>1/</sup>

We will examine the role of price and technology policies in explaining the likely growth of food production and consumption in these three countries in Section III.

#### D. Agriculture and GDP Growth

The three countries have had strikingly different GDP growth records since the mid-1960s, which have been closely related to the growth of their agricultural sectors. Over the 1967-1973 period, GDP at factor cost grew at 7.8% in Kenya, compared to Malawi's 4.6% and Tanzania's 4.4% (see Table 6). Agricultural GDP grew at a high 5.4% in Kenya during the same period mainly due to the growth of smallholder coffee, tea, maize and dairying compared to 2.8% and 2.3% in Malawi and Tanzania, respectively. During 1974-78, GDP growth was similar (at 4.5% and 5.1%) in Kenya and Tanzania as was agricultural GDP growth (4.1% and 4.7% respectively). In Malawi however GDP growth accelerated to 6.4% and, due to the policy of estate expansion detailed below, agriculture GDP was also much higher at 5.8%. Kenya, however, experienced a robust 4.3% GDP growth rate during 1979-81 after the second oil shock, whereas Malawi's growth rate declined to -0.8% and Tanzania's to

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"Food Production and the Nutrition Status in Malawi." A paper prepared by a study team comprised of members from the Department of Economic Planning and Development, Ministries of Agriculture, Finance, Education and Culture, Health and Community Services, for the Interministerial Symposium on Nutrition and Development held in Mangochi from 31st of July to 2nd of August 1986.

Table 6  
REAL GDP GROWTH RATES (a)  
(PERCENT)

YEAR	KENYA	MALAWI	TANZANIA
1967-73			
Agriculture	5.4	2.8	2.3
Industry	14.0	5.3	4.8
(Manufacturing)	14.2	5.5	7.8
(Mining)	12.8		-6.2
Infrastructure	7.7	8.2	9.5
Public Administr. & Defense	10.1	0.1	7.8
Others	8.7	5.0	2.7
GDP F.C.	7.8	4.6	4.4
1974-78			
Agriculture	4.1	5.8	4.7
Industry	6.6	6.7	4.1
(Manufacturing)	6.6	6.7	4.7
(Mining)	6.5		-2.7
Infrastructure	3.3	2.6	3.9
Public Administr. & Defense	6.4	5.7	11.8
Others	3.8	7.6	4.0
GDP F.C.	4.5	6.4	5.1
1979-81			
Agriculture	1.5	-3.9	-1.0
Industry	5.3	2.8	-9.4
(Manufacturing)	5.5	2.8	-10.2
(Mining)	-8.3		2.7
Infrastructure	5.9	-2.2	5.6
Public Administr. & Defense	6.1	8.2	10.0
Others	6.3	-2.6	-0.3
GDP F.C.	4.3	-0.8	1.7
1982-84			
Agriculture	4.4	5.8	1.8
Industry	3.0	3.4	-10.0
(Manufacturing)	3.0	3.4	-9.9
(Mining)	0.0		-2.7
Infrastructure	1.6	0.8	-5.6
Public Administr. & Defense	4.0	7.7	8.2
Others	4.0	5.1	0.9
GDP F.C.	3.7	4.6	1.1

\* Industry is defined as Mining (fuel and other metals) and manufacturing.

\*\* Infrastructure is defined as Construction and Transport and Communication.

\*\*\* GDP is at factor cost to be consistent with individual sectors whose output are at factor cost

(a) Average annual growth rates.

Source: World Bank, FDP for data up to 1983 for Kenya and Malawi, and up to 1982 for Tanzania. 1984 data are obtained from CEMs for Kenya and Malawi. Unpublished data obtained from the Bank of Tanzania and other Tanzania Authorities for 1983-84 data.

1.7%. During this period agricultural growth once again mirrored overall growth performance. Kenya's agricultural growth rate was also the best (1.5%) of the three compared to a sharp drop of -3.9% in Malawi (due to a severe drought during the 1979/80 growing season) and -1.0% in Tanzania.

By 1982-84, GDP growth had been restored to 4.6% in Malawi, rose to 3.7% in Kenya, but remained only 1.1% in Tanzania. Once again, the agricultural sector growth rates contributed to the GDP growth rates, being 4.4% in Kenya, 5.8% in Malawi but only 1.8% in Tanzania. Several other sectors of the Tanzanian economy also experienced negative growth (-10.0% in industry, -5.6% in infrastructure, etc.) resulting from the foreign exchange crisis created by stagnant exports. Thus, the gap between the performance of Kenya (and to a lesser extent of Malawi) with that of Tanzania had widened considerably by the beginning of the 1980s with Kenya's performance being the best of the three.

#### E. Macroeconomic Environment

Kenya's superior agricultural performance is a result in part of the extent to which Kenya adopted generally moderate macro economic policies. Figure 3 shows the trade weighted real effective exchange rates for Kenya, Malawi and Tanzania using the 1972 base. Malawi and Kenya each avoided overvaluation of their currency through regular adjustment of the nominal rates whereas Tanzania's exchange rate overvaluation increased sharply over time with the index having reached 33.9 in 1985 compared to 98.9 in Kenya and 112.1 <sup>1/</sup> in Malawi. Kenya's gross domestic saving rate was also the

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<sup>1/</sup> The results do not change much if a current 1982 base is used.

Figure 3  
real effective exchange rates index  
constant weights

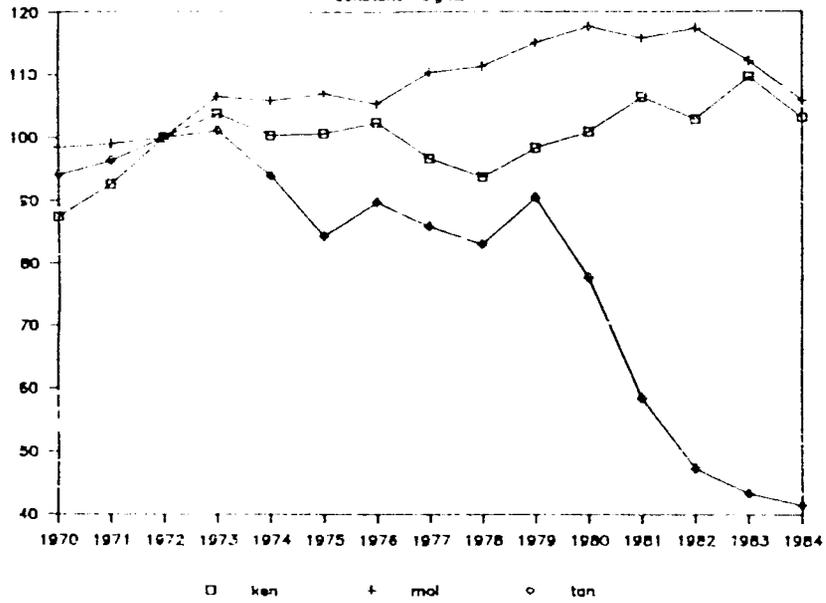


Figure 4  
budgetary deficit  
percent of gdp

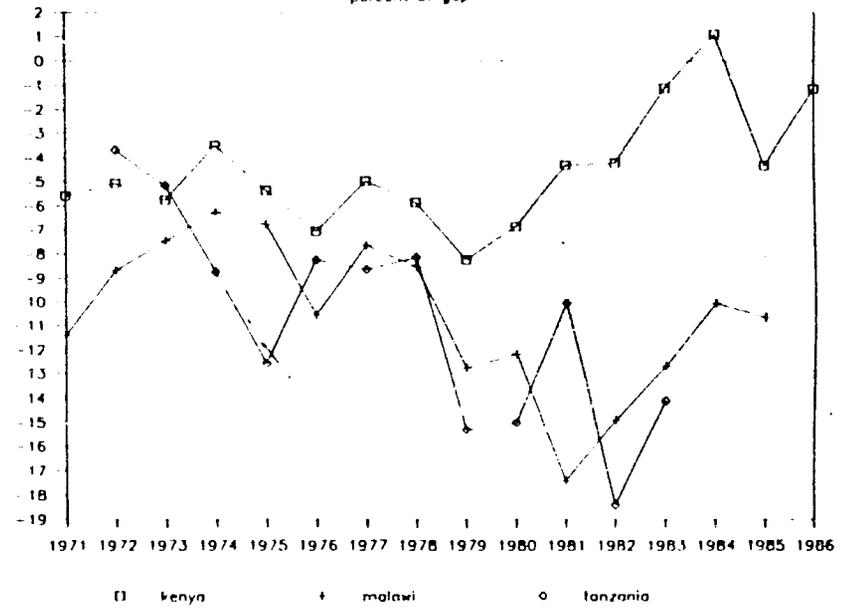


Figure 5  
over-all budget deficit  
percent of gdp

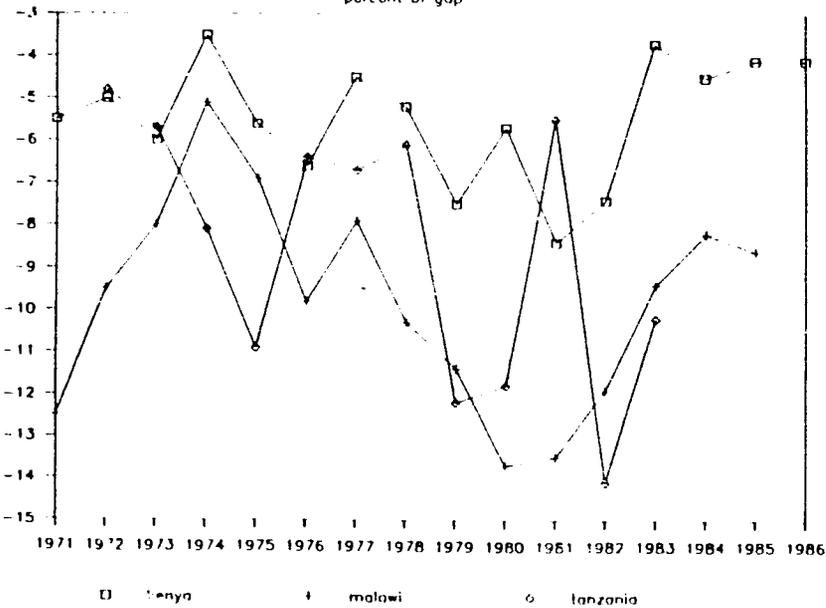
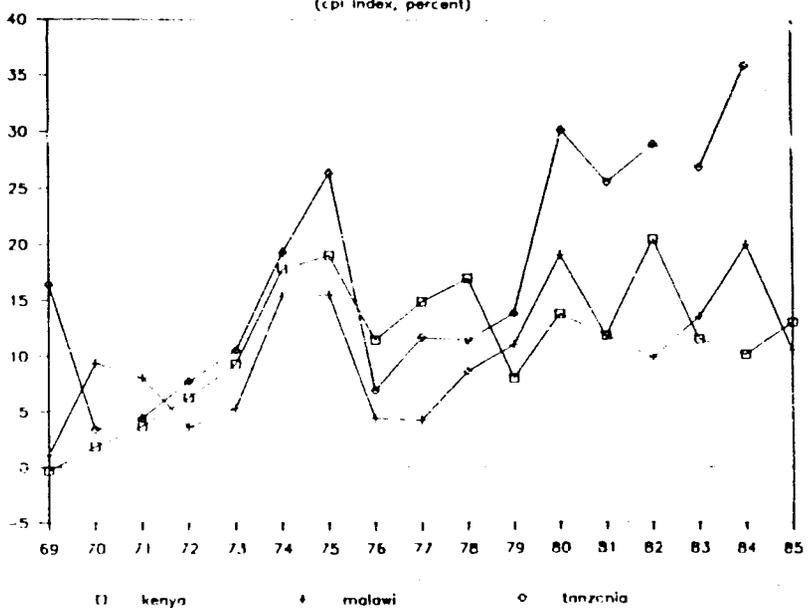


Figure 6  
inflation rates  
(cpi index, percent)



SOURCES

Figure 3: IFS (IMF), 1985, and Direction of Trade Statistics (IMF), 1985.  
 Figure 4 & 5: Kenya Statistical Abstract (70-74), Central Bureau of Statistics (75-80), and Ministry of Finance and Planning (81-86).  
 Figure 6: IFS (IMF), 1985.

highest (20.8% in 1967-73), falling slightly to 18.3% in 1982-84 (Table 7). In Malawi it was 8.2% in 1967-73, rose to 18.3% in 1974-78 and fell to 14.9% in 1982-84. In Tanzania the domestic saving rate fell sharply from 19.2% in 1967-73 to 8.3% in 1982-84.

Gross capital formation as a share of GDP was 22.3% in Kenya in 1967-73, rose to 27% in 1979-81 following the coffee boom and declined to 21% in 1982-84. Concomitant with Malawi's higher growth rate in this period, gross capital formation reached a high of 29.6% in Malawi during 1974-78 (through a combination of increased borrowing and savings), but by the early 1980s it had fallen to a level similar to Kenya's. In Tanzania, the rate remained at approximately 21% from 1967-73 to 1982-84. Kenya's savings and investment behaviour involved broader participation than in Malawi as in the latter case it was closely associated with the growth of estates and other investments financed by implicitly taxing the smallholder sector through a producer price policy (see Section III.B.3).

#### 1. Levels and Sources of Government Expenditures

In this section we examine budget deficits (i.e., total revenues exclusive of grants minus total budgetary expenditures exclusive of lending minus repayments) and overall deficits (to include foreign grants and net lending). Kenya's expenditure (less net lending) as a percent of GDP ranged between 21% in 1974 and 1984 to 32% in 1979. However, the average share was very stable and accounted for about 24% except between 1979-81, when it reached 30% (see Table 8).

Table 7  
INDICATORS OF AVERAGE ECONOMIC PERFORMANCE  
(PERCENT)

YEAR	KENYA	TANZANIA	MALAWI
1967-73			
Real GDP Growth Rates (gdp m.p.)	8.5	5.2	5.2
Growth Rate of Population	3.5	2.7	2.5
Per Capita GDP Growth	5.0	2.5	2.7
Investment to GDP Ratio	22.3	20.8	20.0
Total Saving Ratio	20.8	18.2	8.2
Net Exports Ratio	-1.5	-2.6	-11.8
Current Account Deficit to GDP Ratio	-3.0	-2.9	-11.7
Total Debt to Exports	61.4*	120.6*	148.7*
Debt Service to Exports	4.7*	5.6*	7.1*
Fiscal Deficit to GDP Ratio	-3.4	-5.0	-2.4
Inflation Rate (cpi)	4.2	8.5	12.5
Inflation Rate (gdp deflator)	3.3	6.2	5.8
Real Growth Rate of Agri. Output	5.4	2.3	2.8
Real Growth Rate of Manuf. Output	14.2	7.8	5.5
Real Growth Rate of Mining	12.8	-6.2	
Real Growth Rate of Exports	3.1	3.6	5.9
Real Growth Rate of Imports	4.0	6.1	8.7
Borrowing from the Central Bank as % GDP	1.0	3.6	1.4
Rural Population as % of Total	89.7	92.8	92.6
1974-79			
Real GDP Growth Rates (gdp a.p.)	4.7	4.7	6.6
Growth Rate of Population	3.6	4.0	3.4
Per Capita GDP Growth	1.1	0.7	3.2
Investment of GDP Ratio	23.5	20.6	29.6
Total Saving Ratio	20.0	11.0	18.3
Net Exports Ratio	-3.5	-9.6	-11.3
Current Account Deficit to GDP Ratio	-6.2	-8.1	-3.9
Total Debt to Exports	74.6	187.1	181.7
Debt Service to Exports	6.4	6.6	12.5
Fiscal Deficit to GDP Ratio	-3.6	-7.6	-0.9
Inflation Rate (cpi)	16.0	15.1	8.5
Inflation Rate (gdp deflator)	14.5	14.7	10.2
Real Growth Rate of Agriculture Output	4.1	4.7	5.8
Real Growth Rate of Manufacture Output	6.6	4.7	6.7
Real Growth Rate of Mining	6.5	-2.7	
Real Growth Rate of Exports	2.0	-6.8	-0.7
Real Growth Rate of Imports	7.8	2.8	6.1
Borrowing from the Central Bank as % gdp	3.6	8.2	2.9
Rural Population as % of Total	87.4	90.1	91.6

Table 7 (continued)

YEAR	KENYA	TANZANIA	MALAWI
1979-81			
Real GDP Growth Rates (gdp m.p.)	-4.2	1.8	2.0
Growth Rate of Population	5.3	3.2	2.6
Per Capita GDP Growth	-1.1	-1.4	-0.6
Investment to GDP Ratio	27.0	22.2	27.0
Total Saving Ratio	18.2	10.8	13.2
Net Exports Ratio	-8.8	-11.4	-13.8
Current Account Deficit to GDP Ratio	-10.5	-10.2	-12.7
Total Debt to Exports	120.2	261.1	211.4
Debt Service to Exports	14.3	9.4	24.8
Fiscal Deficit to GDP Ratio	-4.6	-10.1	-1.0
Inflation Rate (cpi)	11.2	23.2	4.0
Inflation Rate (gdp Deflator)	9.0	21.9	9.1
Real Growth Rate of Agriculture Output	1.5	-1.0	-3.9
Real Growth Rate of Manufacture Output	5.5	-10.2	2.8
Real Growth Rate of Mining	-8.3	2.7	
Real Growth Rate of Exports	-1.3	8.5	11.9
Real Growth Rate of Imports	-9.9	-8.3	-4.6
Borrowing from the Central Bank as % gdp	6.0	18.6	9.3
Rural Population as % of Total	85.8	88.2	90.5
1982-84			
Real GDP Growth Rates (gdp m.p.)	1.8	1.1	3.5
Growth Rate of Population	4.1	3.2	3.8
Per Capita GDP Growth	-2.3	-2.1	-0.3
Investment to GDP Ratio	21.2	20.1	21.9
Total Saving Ratio	18.3	8.3	14.9
Net Exports Ratio	-2.9	-11.8	-7.0
Current Account Deficit to GDP Ratio	-4.7	-11.9	-3.0
Total Debt to Exports	158.8	490.6	257.0
Debt Service to Exports	20.9	12.7	21.7
Fiscal Deficit to GDP Ratio	-3.9	-3.9	-0.7
Inflation Rate (cpi)	14.0	30.6	5.4
Inflation Rate (gdp deflator)	9.6	12.9	9.4
Real Growth Rate of Agriculture Output	4.4	1.8	5.8
Real Growth Rate of Manufacture Output	3.0	-9.9	3.4
Real Growth Rate of Mining	0.0	-2.7	
Real Growth Rate of Exports	2.9	-15.8	-0.9
Real Growth Rate of Imports	-6.4	-4.1	-0.4
Borrowing from the Central Bank as % GDP	10.4	21.9	19.3
Rural Population as % of Total			

\* The Average is over 1970 to 1973.

Source: World Bank (EDP, CEMs, World Tables), IMF (IFS, 1985).

Table 8  
Composition of Government Financial Operations  
(Percent of GDP at Market Prices)

	1971-73	1974-79	1979-81	1982-86
<b>Kenya</b>				
1 Government Expenditure	24.6	24.1	30.4	24.5
2 Government Revenue	19.3	18.7	23.9	22.6
3 Budgetary Deficit (2-1)	-5.5	-5.3	-6.5	-1.9
4 Government Expenditure & Net Lending	25	24.3	31.8	28.9
5 Government Revenue & Foreign Grants	19.5	19.3	24.6	24.2
6 Over-all Deficit (5-4)	-5.5	-5.1	-7.2	-4.7
7 Financing The Deficit (8+9-10)	5.5	5.1	7.2	4.8
8 External Borrowing	2.1	1.9	3.5	1.2
9 Domestic Borrowing	3.2	2.9	4.2	3.4
10 Change in Cash Balances	-0.2	-0.3	0.5	-0.2
<b>Malawi</b>				
1 Government Expenditure	23.5	22.1	33	30.2
2 Government Revenue	14.2	14.1	18.9	18.1
3 Budgetary Deficit (2-1)	-9.2	-8	-14.1	-12.1
4 Government Expenditure & Net Lending	25	23.3	35.1	30.3
5 Government Revenue & Foreign Grants	15	15.3	22.3	20.8
6 Over-all Deficit (5-4)	-10	-8	-12.8	-9.5
7 Financing The Deficit (8+9-10)	10	8	12.9	9.5
8 External Borrowing	6.9	5	7.4	5.9
9 Domestic Borrowing	1.6	1.7	3.9	4.3
10 Change in Cash Balances	-1.5	-1.3	-1.6	0.7
<b>Tanzania</b>				
1 Government Expenditure	21.1	28	34.5	38.3
2 Government Revenue	16.7	18.7	21.1	22.1
3 Budgetary Deficit (2-1)	-4.5	-9.3	-13.5	-16.3
4 Government Expenditure & Net Lending	22.3	28.2	34.5	38.3
5 Government Revenue & Foreign Grants	17	20.6	24.6	26.2
6 Over-all Deficit (5-4)	-5.2	-7.6	-9.9	-12.2
7 Financing The Deficit (8+9-10)	5.3	7.7	9.8	12.1
8 External Borrowing	1.9	2.7	3.2	1.4
9 Domestic Borrowing	2	2.6	8.3	9
10 Change in Cash Balances	-1.4	-2.4	1.7	-1.7

Notes Most of the Data are reprinted in Corresponding CEMs  
Tanzania Series Start in 1972 and ends in 1983  
Malawi , series ends in 1985  
Kenya's 1985 and 1986 data are from Budget Estimates  
Overall Deficit and total Financing may not match exactly, because of rounding

Sources For Kenya ,Kenya Stast.Abstract, Central Bureau of Statistics,Ministr.of Finances  
For Malawi,Public Sector Financial Statistics,Economic Reports 1985.  
For Tanzania, Bureau of Statistics, Economic Surveys, Statistical Abstract

In Malawi, the GDP share of total expenditure (less net lending) ranged from a low of 20% in 1974 to a high of 36% in 1981. In Tanzania, the GDP share of total expenditure (less net lending) showed a continuous increase ranging between a low of 20% in 1972 to a peak of 40% in 1982.

Expenditure as a share of GDP was the highest in Tanzania followed by Malawi, then Kenya. Also the share grew faster in Tanzania than in Malawi and Kenya. Shares showed a decline after 1982 in all three countries.

The share of revenue (exclusive of foreign grants) in GDP does not differ greatly among the three countries. It ranged between 19% in 1974-79 and 24% in 1979-81 in Kenya; between 14% in 1974-79 and 18.9% in 1979-81 in Malawi; and between 16.7% in 1971-73 and 22% in 1982-83 in Tanzania. Both Malawi and Kenya show a very similar pattern in terms of domestic fiscal revenues. Revenues fell between 1974-79, then increased between 1979-81, then fell in subsequent periods. On the other hand, Tanzania showed a steadily increasing trend throughout all these periods.

In terms of magnitude, Kenya had the highest revenue/GDP share, followed by Tanzania and then Malawi. The lowest expenditure share combined with the highest revenue share meant that Kenya's "budgetary deficit" was the lowest in terms of share of GDP. Malawi comes second with a relatively higher expenditures share but with a relatively lower revenue share.

Tanzania showed the highest budgetary deficit in terms of GDP share with the highest expenditure share and relatively higher revenue share. The pattern for the budgetary deficit is the same as the pattern for the revenue share in all the three countries. However, overall deficits, showed different ranking, altering slightly the position of Malawi and Tanzania. In Kenya, the budgetary deficit and overall deficit were very similar up to 1980, after which the overall deficit worsened significantly due to the combination

of steady foreign grants and increasing net lending (see Figures 4 and 5 p. 25). Similar trends were noticeable in Malawi up to 1980. From 1980 on, while the overall deficit worsened in Kenya relative to the budgetary deficit, in Malawi the overall deficit improved over the budgetary deficit, due to an increasing GDP share of foreign grants to Malawi, especially since 1978.

In Tanzania, the overall deficit was smaller than the budgetary deficit throughout the period, due to an increasing share of foreign grants in GDP, with the share of foreign grants in GDP being largest since 1979. Malawi, with its largest overall deficit relied more on foreign borrowing as compared to domestic borrowing to finance its overall deficit while Kenya and Tanzania used relatively more domestic borrowings.

## 2. Inflation Rates

Malawi had the lowest overall inflation rates of 12.5% in 1967-73, declining to 5.4% in 1982-84. Tanzania had the highest, rising from 8.5% in 1967-73 to 30.6% in 1982-84. Kenya's inflation rates have been intermediate, ranging from 4.2% in 1967-73 to 14.0% in 1982-84. While these general patterns obtain overall, there is considerable year to year variation in inflation rates (see Figure 6, p. 25). To the extent that the stability of inflation rates is important as well as their level, Kenya's rates showed less fluctuation than did Malawi or Tanzania. Tanzania's discount rates were the least adjusted to its inflation rates compared to Kenya's or Malawi's, although all had negative discount rates.

## 3. The Effects of External Shocks

A comparative examination of the effects of external shocks was undertaken in this study as African, especially Tanzanian, policymakers have

emphasized the adverse effects of shocks on their economies. Ansu decomposed the sources of variations in current accounts in terms of shocks (i.e., variation in terms of trade, interest payments and the growth of foreign demand less interest rates) and policy-based changes (changes in market shares, in real GDP, changes in import demand due to expenditure switching as import substitution policies and interest payments due to increased debt). Tanzania's terms of trade index fell the least over the period from 1967 to 1984, while Kenya's fell the most (see Table 9).<sup>1/</sup> This may be because Tanzania and to a lesser extent Malawi have more diversified trading partners including African, Asian and OECD countries while Kenya relies only on the latter.

It is further noteworthy that Tanzania's pure terms of trade effects are negligible while these are substantial in both Kenya and Malawi. On the other hand policy based changes in market shares were the most unfavourable in Tanzania, followed by Malawi and Kenya, as Tanzania lost market shares to a greater extent than did Malawi and Kenya. All three countries compressed imports, but to a lesser degree in Kenya than in Malawi and Tanzania. This is because the income elasticity of imports is greater in Malawi and Tanzania than in Kenya. The income growth effect contributed the most to the worsening of the current account through increased imports. Import compression, on the other hand, had a positive effect on the current account.

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<sup>1/</sup> Yaw Ansu, "Macroeconomic Shocks, Policies and Performance: A Comparative Study of Kenya, Malawi and Tanzania -- 1967 to 1984". Draft Paper prepared for MADIA Study, July 1986, p. 64.

Table 9  
Decomposition of External Shocks and Policies  
(percent of current gdp)

External Shocks and Policies	Kenya					Malawi					Tanzania				
	1974-84	1967-73	Averages 1974-78	1979-81	1982-84	1974-84	1967-73	Averages 1974-78	1979-81	1982-84	1974-84	1967-73	Averages 1974-78	1979-81	1982-84
Variation in The Current Account	-6.1	-1.2	-5.3	-9.8	-3.6	-9.9	-4.7	-6.3	-13.7	-12.0	6.9	-4.1	-6.7	-8.2	-5.7
Shocks	-6.5	-0.6	-5.7	-10.1	-4.4	-3.7	3.9	0.0	-11.0	-2.5	-2.6	0.6	-1.6	-4.4	-2.4
Terms of Trade	-9.0	-1.8	-7.4	-12.1	-8.5	-6.9	1.5	-6.0	-11.1	-4.1	-7.1	-0.6	-6.3	-8.6	-7.0
Foreign Demand	4.6	2.8	4.7	3.9	5.8	4.1	0.9	4.2	4.1	3.0	3.7	0.5	3.9	3.7	3.5
Interest Rate Price Effect	-0.3		-0.1	-0.4	-0.4	-0.4		0.0	-1.3	-0.3	0.3		0.3	0.2	0.6
Net Factor Income (less Capital Income)	-2.0	-1.6	-2.9	-1.5	-1.2	-0.5	1.5	1.8	-2.8	-2.0	0.4	0.7	0.3	0.4	0.5
Policies	-3.8	-3.8	-3.9	-3.2	-4.1	-7.2	-6.2	-7.9	-6.7	-6.3	-10.0	-6.0	-12.5	-7.9	-7.7
Exports Market Share	-1.9		-2.0	-1.6	-2.0	-2.2		-2.4	-2.3	-1.8	-5.9		-7.3	-5.0	-4.6
Real Gdp Growth	3.7	3.8	3.9	3.1	3.9	9.4	6.2	7.7	9.1	9.0	8.6	6.0	8.7	8.1	8.6
Change in Import Function	-2.6	0.0	-2.2	-2.4	-3.2	-5.6	0.0	-4.9	-6.1	-6.4	-5.2	0.0	-3.9	-6.1	6.6
Interest Payment Due to Increased Debt	-0.8		-0.3	-0.9	-1.4	-1.2		-0.7	-1.5	-1.8	0.7		-0.5	-0.6	-1.1
Others	5.2	3.2	5.6	4.1	5.7	2.4	-2.1	3.4	5.9	-2.5	5.4	1.3	7.5	4.1	3.0
Fluctuations Around Avg Market Share	0.4	0.2	2.0	-0.2	-1.7	2.4	-0.2	2.6	2.7	1.8	0.4	0.7	2.0	0.3	-2.2
Fluctuations Around Import Elasticity	-0.3	0.2	0.2	0.3	-1.6	-0.1	0.4	0.6	0.5	-1.8	-0.4	0.5	-0.4	0.0	-0.9
Transfer Payment	1.5	1.7	1.2	1.6	1.8	1.7	-2.1	0.4	4.0	1.3	2.5	0.0	2.8	3.0	1.7
Net Export of Non Factor Services	3.1	1.5	2.6	3.0	4.0	-1.7	0.5	0.9	-0.3	-7.4	2.0	1.1	2.4	0.9	2.6
Residual	-1.0	0.0	-1.3	-0.6	-0.8	-1.4	-0.3	-1.8	-1.9	-0.7	0.3	0.0	0.0	0.0	1.4
Mean															
Imbalanced Terms of Trade*	-1.2	-0.6	-1.9	-3.1	2.0	-2.7	-0.6	-5.3	-2.0	1.1	-6.5	-0.2	-6.7	-6.9	-5.6
Pure Terms of Trade	-7.8	-1.2	-5.5	-9.0	-10.5	-4.2	2.1	-0.7	-9.1	-5.2	-0.6	-0.6	0.5	-1.7	-1.4
Net Policy Effect**	-0.1	0.0	0.0	-0.1	-0.2	2.2	0.0	1.8	2.4	2.7	-1.4	0.0	-3.8	0.5	0.9

Notes \* When Imports exceed Exports the Current Account could Deteriorate  
Even as the terms of Trade improves

\*\* Policy effects less real gdp growth effect

Source : IFS, IMF, 1985, 1986

Both Kenya and Malawi experienced greater shocks due to changes in interest rates and increased payments due to an increased debt burden, but each of these was greater for Malawi than for Kenya due to Malawi's higher and increased borrowings. Kenya on the other hand was paying the highest interest rates on foreign loans, followed by Malawi. Tanzania was a distant third with even declining rates due to greater reliance on public loans.

Table 9 shows that the contributions of policies have been negative in each of the countries. However, this picture is misleading for the following reasons. In all three countries, the income growth effect contributed the most to the worsening of the current account through increased imports. As Ansu has put it "Certainly no one would argue that it was bad policy to allow real GDP to grow".<sup>1/</sup> One can also argue that growth itself is not a policy; it is the result of policies. Hence, to better understand the effects of policy-controlled factors, one has to subtract the induced import effect of real growth. Table 9 indicates that in Kenya the net effect of policies (policies less GDP growth) was virtually nil; positive in Malawi, and negative in Tanzania, thus, reinforcing the effects of shocks in the latter.

The effects of other shocks such as Tanzania's involvement in the Ugandan war or the breakup of the East African Community were not measured as reliable data on these subjects are difficult to obtain. In any case each country had some unique shocks (e.g., the return of the migrant workers in Malawi in the early 1970s, and the effect on Malawi's transport routes of the Mozambian war -- costing it \$50 million dollars or 20% of its export earnings in 1985).

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Ibid.

#### 4. Patterns of Government Expenditures

Figures 7a and b show the pattern of capital and recurrent budgetary expenditures of the three governments by sectors over the 1970 to 1986 period. The share of agriculture in total expenditures was highest in Malawi (ranging between 10% to 16%) and lowest in Tanzania. Also in Tanzania agriculture's share declined sharply from 11% in the early 1970s to 7% by the end of the 1970s whereas that of the industrial sector increased from 2% in 1972 to 11% in 1980, a result of Tanzania's adoption of the Basic Industrial Strategy.

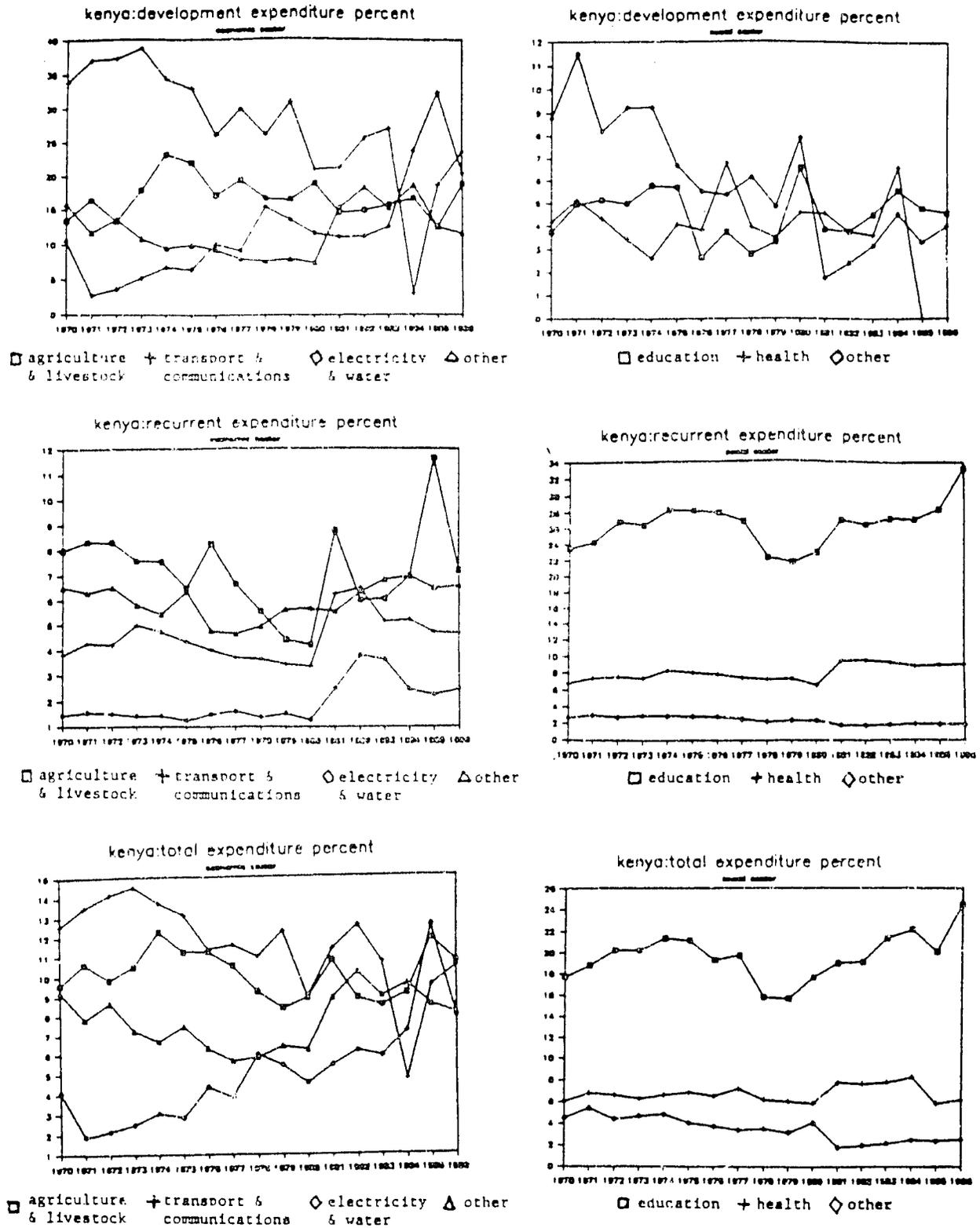
Reflecting a steadier policy environment, agriculture's share fluctuated between 8% to 12% in Kenya. In Kenya's case the share of the developmental budget going to agriculture increased sharply reaching a peak of 23.3% in 1974 from a base of 13% and declined to a low of 12% in 1985 while showing some fluctuations from year to year. The share of the recurrent budget going to agriculture had declined from a high of 8% in 1970 to 4.4% in 1979-80 resulting in a shortage of recurrent finance in agricultural projects.<sup>1/</sup> Recurrent funding problems were also prevalent in Malawi and Tanzania due to a similar switch in shares of recurrent and capital expenditures.

Total governmental expenditures (developmental and recurrent) showed major differences in Kenya, Tanzania and Malawi. Kenya showed the highest share of central government expenditures going to social services (ranging between a low of 25% and a high of 33%).

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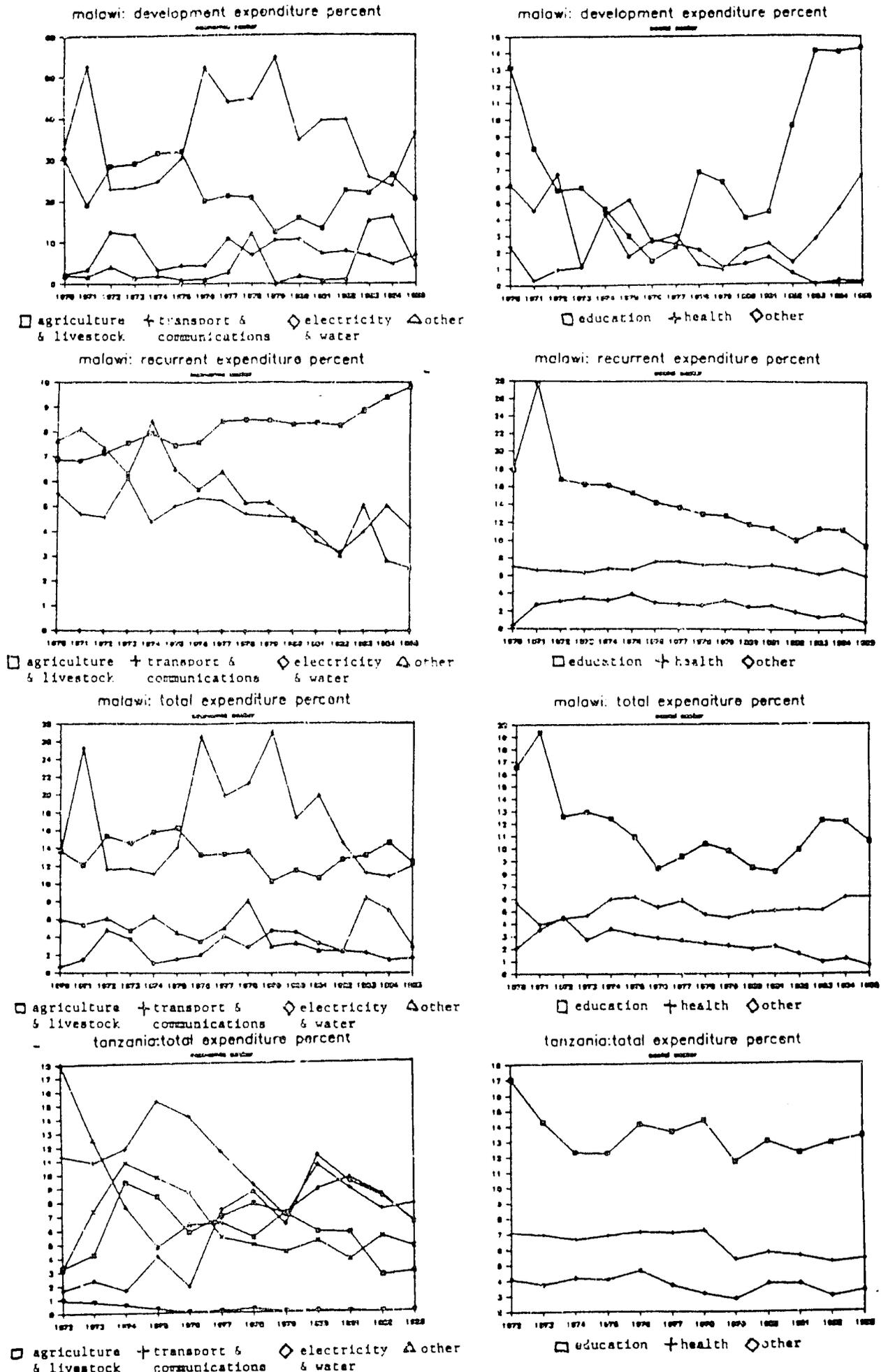
<sup>1/</sup> The decline in agriculture's share may be explained partly by the tripling share of public debt in recurrent expenditures by the late 1970s from the 1970 base, going from 6% to 17.8%.

Figure 7a



Sources: Kenya Statistical Abstract (70-74), Central Bureau of Statistics (75-80), and Ministry of Finance and Planning (81-86).

Figure 7b



Sources Malawi: Public Sector Financial Statistics 1973, 1975, 1976, 1979, & 1982, and Economic Report, 1985.

----- Tanzania: Economic Surveys, Bureau of Statistics

Commensurate with its poor social indicators (see next section), Malawi had both declining and the lowest shares of expenditures on social services with the levels being well below 20% -- 15% in 1980 and 1981 compared to the high of 25% in 1970. Malawi's expenditures on education were the lowest of the three and Kenya's the highest. Tanzania's share of social services declined in the latter half of the 1970s from a high of 28% to a low of 21%. In contrast, the share of its defense expenditures rose from a low of 9.7% in 1973 to a high of 24.4% in 1979.

It is paradoxical that Tanzania, a large country with low population densities, poor initial infrastructure and population concentrations mostly in the areas bordering on other countries, devoted a smaller share (averaging about 7%) of its resources to transportation and communications compared to Kenya and Malawi.<sup>1/</sup> Kenya and Malawi's expenditures on transport and communications have been similar (12% to 14%) although Malawi's rose to a high of 26% between 1976 and 1979. Additional expenditures in Malawi, however, included the construction of the capital city and government buildings, including the State House, which did not benefit the rural population.

Tanzania's expenditures on transport and communications declined to

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Tanzania has a total road network of about 50,000 km. This means it has about 2.9 km of road per 1,000 inhabitants, one of the lowest ratios in Africa. Thirty-five percent of the agricultural traffic goes by rail. This is high by other countries' standards, again reflecting lack of investment in roads.

4% to 6% in the late 1970s from a high of 18% in 1972.<sup>1/</sup> However even this limited budget reflects the fact that like Malawi, Tanzania devoted resources to non-productive construction of a new capital city in Dodoma.

A factor contributing to the growth of expenditures and the shortage of recurrent funding for operating expenses was rapidly increasing public sector employment in all three countries. The growth of public sector employment was, however, the sharpest in Tanzania, i.e. 15.6% annually between 1976-77 and 1977-78. Reflecting the lower priority attached to agriculture relative to other sectors, public sector employment growth in the agricultural sector was nonetheless slower than in other (especially education and industry) sectors. A small fraction of these employees, (10%) were involved in the provision of basic services in the Ministry of Agriculture, over which the Ministry of Agriculture had lost control subsequent to the decentralization of the Tanzanian administration. Seventy seven percent were working for parastatals.

##### 5. Indicators of Investments in Human Capital

The extent to which each government allocated resources to the building of human capital has affected rural welfare as well as growth possibilities by increasing capacity to plan and manage the economy. Rapid

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<sup>1/</sup> Tanzania also ranks among the lowest in Africa with respect to the share of public capital resources (13%) allocated to transport (compared to 22% to 25% for Kenya and 31% for Malawi). The private trucking fleet in Tanzania has been shrinking in size. Before 1974 private truckers provided all the commercial freight haulage services. By 1977 this share had declined to about half of the total market. Truckers left the agricultural industry and concentrated their operations in urban areas, leaving rural areas to parastatal trucking (40% of the total vehicle fleet was in Dar-es-Salaam in late 1970s).

population growth can erode many welfare gains. It is therefore important to note at the outset that Kenya started out with higher population growth rates (3.8%) between 1967 and 1973 compared to Tanzania (3.2%) and Malawi (2.8%). While population growth rate accelerated in all three countries, in Kenya it reached the highest level -- 4% during the 1973-84 period.

Tanzania and Malawi started out with poorer initial conditions than Kenya in 1965 as regards social welfare (see Table 10). Malawi had the lowest life expectancy for males and females compared to Tanzania and Kenya. Kenya continued to hold a lead in female life expectancy over Tanzania and Malawi. However the percentage gain in Tanzania's female life expectancy was greater (20%) compared to Malawi's (15%) and Kenya's (22%). The same applied in the case of male life expectancies, with Kenya holding the lead but with Tanzania showing a slight edge (22%) compared to Kenya (21%), and Malawi showing the least percentage change (16%).

With regard to the number of persons relative to physicians, Malawi started out over three times as badly off (46,900 persons/physician in 1965) compared to Kenya (13,450). Tanzania was about one and a half times as badly off (21,840) as Kenya. Malawi's situation, however, appears to have deteriorated over time (with the persons/physician ratio rising to 52,960 in 1981) while Kenya reduced the persons/physician ratio by half from 13,450 persons to 7,540 during the same period. Tanzania's ratio was 19,810 persons per physician in 1978 (the latest year for which figures are available).

Kenya also continued to hold the lead in the spread of primary education, increasing the percent of those of school going age attending school from 40% to an impressive 97% for females and from 69% to 104% for males. Its lead in secondary education, with 4% to 19% of the age group

Table 10

SOCIAL INDICATORS  
Kenya, Malawi & Tanzania

	Population				Life Expectancy at birth				Physicians		Number Enrolled in School				Safe Water Access			
	Total	Growth Rates		Non-urban	Female		Male		1965	1981	Primary		Secondary		1973	1980		
	1984 (mil.)	1965-73 (%)	1973-84 (%)	Pop. as % of Total	1965 (years)	1984 (years)	1965 (years)	1984 (years)	(population per)	(population per)	Female	Male	1965	1983	1965	1983	(% of population)	(% of population)
Kenya	20	3.8	4.0	82	46	56	43	52	13450	7540	40	97	69	104**	4	19	15	26
Malawi	7	2.8	3.1	88	40	46	38	44	46900	52960	32	52	55	73	2	5	33	41
Tanzania	21	3.2	3.4	86	44	53	41	50	21840	19810*	25	84	40	91	2	3	13	34

\*1978 (1981 figure not available)

\*\*Gross enrollment ratios may exceed 100 percent because some pupils are above or below standard primary-school age.

Source: 1986 World Development Report, World Development Indicators Annex, Tables 25-31;  
 † Social Indicators of Development 1986, Comparative Analysis and Data Division  
 Economic Analysis and Projections Department, World Bank  
 Tanzania Central Statistical Bureau, Statistical Abstract (1978 pop. per physician)

receiving secondary education, is even more impressive. Tanzania's gain in primary education (84% of the age group) was the greatest given the low base (40% in primary education) but there was no significant movement in the numbers attending secondary education in Tanzania (an increase from 2% to 3%). Malawi made the least progress on the growth of primary education although its relative position on secondary education improved from 2% to 5% both over time and relative to Tanzania's.

Malawi had the lead in access to safe water (33% of the population) in 1973 over Tanzania (13%) and Kenya (15%). However, Tanzania's relative gain (an increase to 34%) was the greatest compared to the total coverage achieved in 1980 in Malawi (41%) or Kenya (26%).

Encouraged partly by the donors, Tanzania adopted a policy of providing piped water to the entire rural population by 1991. However, in 1984 half of the rural water supplies provided were either inoperative or operating at reduced capacity.<sup>1/</sup> It is thus not possible to indicate the actual extent of rural water access.

## II. LEVELS OF FOREIGN ASSISTANCE

Judging the appropriateness of Official Development Assistance (ODA) levels is not easy. Nor is it easy to sort out the degree to which overall ODA levels have contributed to agricultural growth. ODA levels may be considered on a "need" basis, in which case it could be argued that Kenya (with its higher per capita income than Tanzania's and Malawi's) may "need"

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<sup>1/</sup> Marian Radetzki, "Swedish Aid to Kenya and Tanzania: Its Impact on Rural Development". Paper prepared for MADIA Study, August 1986.

less ODA than the other two countries. On the other hand, if demonstrated overall economic performance is the criterion, then Kenya would clearly seem to have been more qualified for higher ODA levels than Tanzania and perhaps Malawi. In actuality, Tanzania received substantially higher ODA, in both absolute (\$669.0 million in 1981) and per capita terms (a peak of \$35 in 1981) than either Kenya (a peak of \$428.3 million in 1981 and \$26 per capita) or Malawi (a peak of \$140.3 million in 1979 and \$24 per capita) (see Figures 8a and 8b). Although Tanzania's ODA peaked in 1981 once a poor commitment to policy reform was noted by donors it nevertheless remained higher in absolute and per capita terms (\$25) in 1984 than Kenya's (\$21) and Malawi's (\$23). Kenya's showed a significant rise from 1977 to 1982, declining thereafter.

ODA is also given by donors so as to induce policy changes, an approach initiated in the early 1980s. On this basis, the country with the least distorted policies, Kenya, should have received less assistance than Tanzania or Malawi, because Kenya's performance had the least need to improve. In fact, however, since Kenya and Malawi appeared to be more willing to undertake policy reforms than Tanzania, they received greater structural adjustment support than Tanzania. Thus, "non-project lending" for the period 1980-86 was 24% and 37% of the Bank's total portfolio for Kenya and Malawi, respectively, compared to 10% for Tanzania. As of June 1986 Malawi had received three structural adjustment loans with amounts of \$170 million by the Bank, and Kenya three structural and/or sector loans amounting to \$245.9 million whereas Tanzania received no funding from the Bank for projects in the agricultural sector from 1982 nor for SALs until 1986.

Overall, ODA constituted a smaller share of GDP and government expenditures in Kenya than in Malawi or Tanzania. Between 1970 and 1984, ODA

Figure 8a  
 Total ODA: 1970-84  
 In Constant 1983 \$U.S.

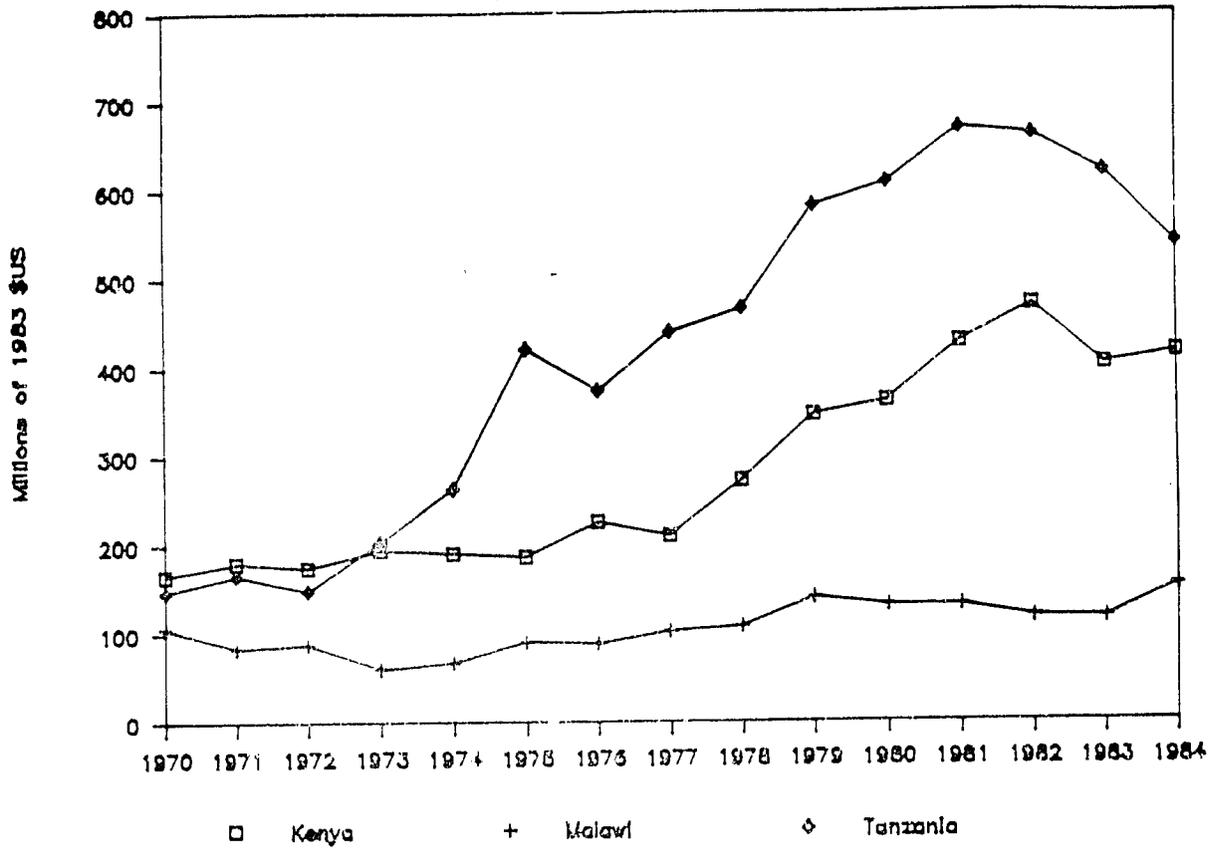
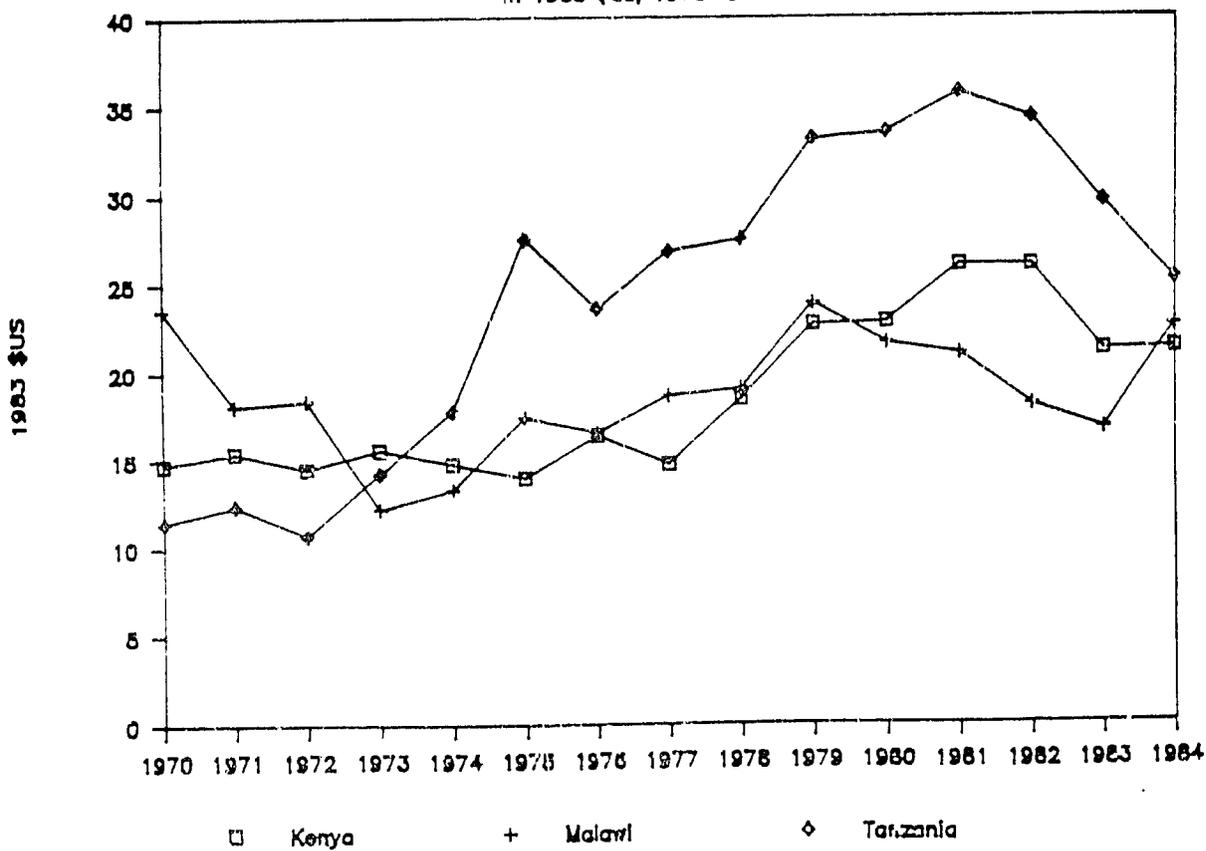


Figure 8b  
 Per Capita ODA: 1970-84  
 In 1983 \$us, 1970-84



Source: OECD, "Geographical Distribution of Financial Flows", various years.

averaged 5.3% of Kenya's GDP (21.9% of government expenditures). In Malawi and Tanzania, ODA was 9.6% and 9.7%, respectively, of GDP, (43.8% and 31.9% of their respective government expenditures).

The Bank's share in ODA could be a reflection of its influence in two quite different ways. A smaller share might mean lower financial influence but great need for aid coordination. It might however, also mark the fact that through co-financing of projects or programs with other donors the Bank could influence project level investments or sector level policies and institutions. ODA was a small 9.5% in Kenya during 1970-84, compared to nearly 20% in Malawi and Tanzania (see Figure 9). The share of Bank lending (as distinct from IDA credits) to Kenya was larger than in Tanzania and Malawi. The Bank's 19.4% share in net resource transfers (TRN) to Kenya was similar to the 20.3% in Malawi; TRN to Tanzania was only 11.6%.

The Bank's influence on Kenyan policies and investment allocations has been distinctly more significant than that suggested by ODA levels, owing to three factors: (i) other donors' perceptions of the Bank's professionalism in the field and status as an international institution -- which have tended to give its presence and advice to the government more weight than its direct contribution to ODA might suggest; (ii) the Bank's extensive practice of co-financing individual projects with other donors;<sup>1/</sup> and (iii) its recent active role as an aid coordinator, especially given the growing importance of macro and sector policy reforms.

The Bank's influence has, however, been less strong in Kenya than in Malawi where the sources of assistance are less diversified. World Bank and

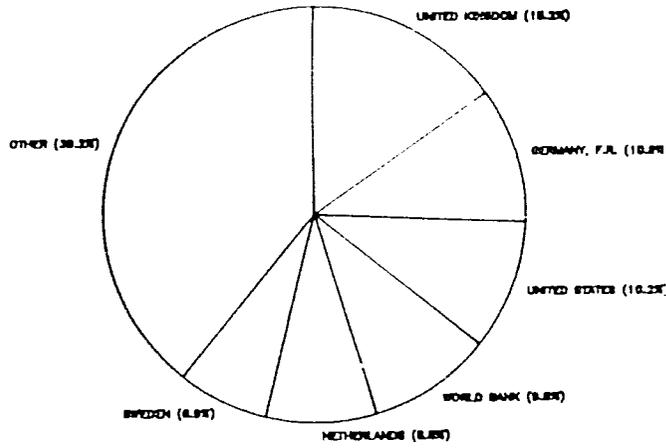
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<sup>1/</sup> See Lele and Meyers, op cit.

Figure 9

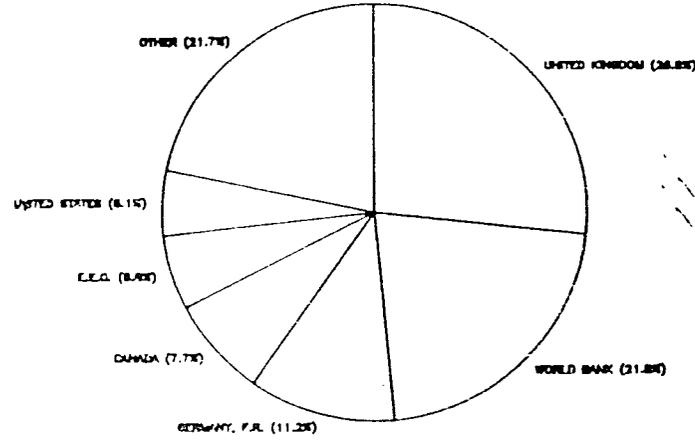
KENYA: ODA, 1970-1984

Top 10 Donors



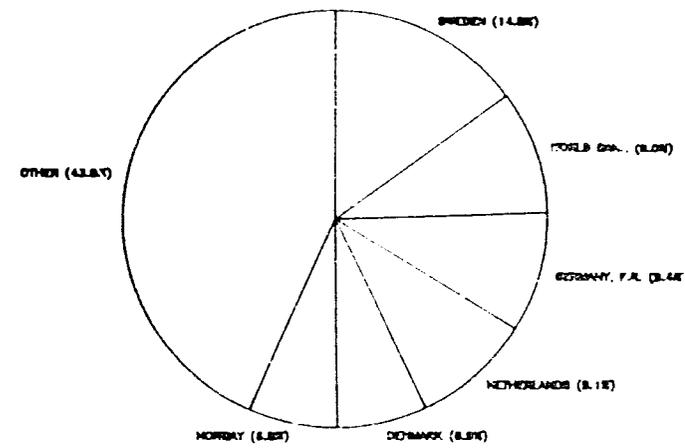
MALAWI: ODA, 1970-1984

Top 10 Donors



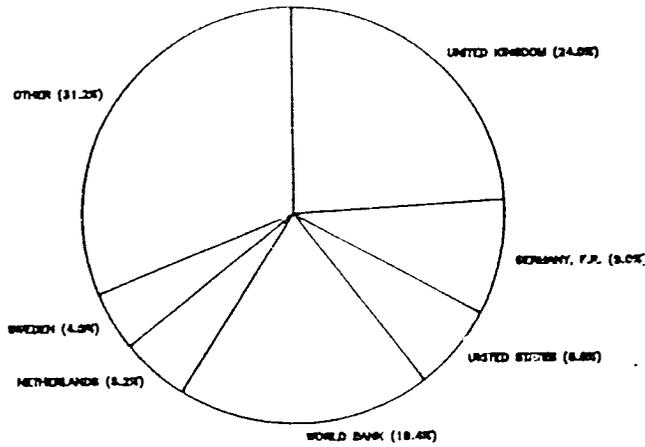
TANZANIA: ODA, 1970-1984

Top 10 Donors



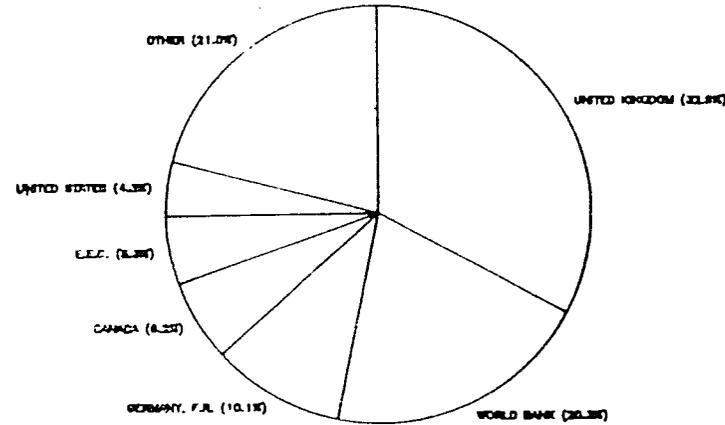
KENYA: TRN, 1970-1984

Top 10 Donors



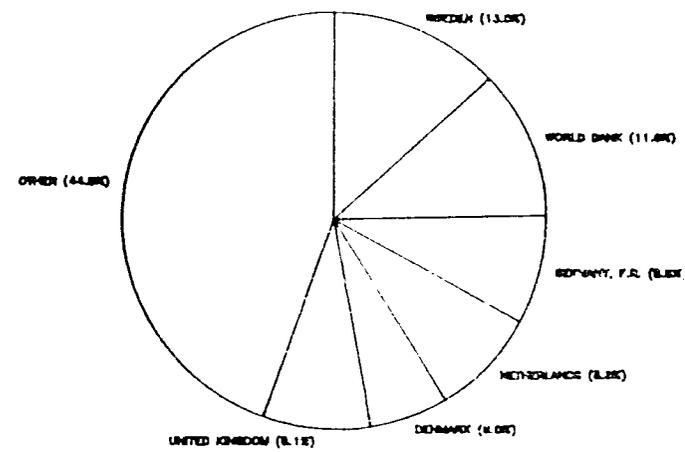
MALAWI: TRN, 1970-1984

Top 10 Donors



TANZANIA: TRN, 1970-1984

Top 10 Donors



Source: OECD, "Geographical Distribution of Financial Flows", various years.

UK assistance together constitute close to half of ODA and over half of TRN. Malawi's debt has also been increasing more rapidly than Kenya's. Also, the UK has tended to align itself with the Bank on major policy issues.<sup>1/</sup> The Bank's influence has, however, been stronger in Kenya relative to Tanzania because Tanzania receives over a third of its ODA from the so-called "friendly donors" (Scandinavian countries and the Netherlands) who have been far more tardy in recognizing the adverse consequences of Tanzania's industrialization and other public sector dominated policies on the efficiency of the Tanzanian economy and have been reluctant to tie their assistance to macropolicy adjustments, as have the Bank and USAID.<sup>2/</sup> The Tanzanian government has also been reluctant to call an aid coordination meeting on grounds that the donors would gang up and push for macropolicy reforms, that it was not ready to undertake. The first aid coordination meeting for Tanzania after 9 years was held in Paris in June 1986.

Despite greater and more effective attempts at aid coordination by the Bank in recent years, we will argue that failure on this important front continues for a variety of reasons: these include (1) the lack of an overall agreed upon long term strategy of development for each country; (2) the lack of donors' willingness to focus on those aspects of assistance which they have the greatest comparative advantage to address, within the confines of the

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<sup>1/</sup> John Howell, "UK Agricultural Aid to Kenya and Malawi". Paper prepared for MADIA Study.

<sup>2/</sup> See M. Radetzki *op cit*; E. Hanak and M. Loft, "Danish Development Assistance to Tanzania and Kenya, 1962-1984: Its Importance to Agricultural Development"; B. F. Johnston and A. Hoben, *et al*, "An Assessment of A.I.D. Activities to Promote Agricultural and Rural Development in Sub-Saharan Africa". Papers prepared for MADIA Study. (Drafts).

limitations posed by the recipient countries' absorptive capacities; (3) the lack of flexibility among donors in providing assistance to countries in the areas of the countries' greatest need due to aid tying and assorted pressures from domestic constituencies; and (4) inadequate emphasis in the recipient countries on maximizing aid effectiveness by directing aid toward alleviating their most important long-term developmental constraints, rather than for meeting immediate short-term political objectives.<sup>1/</sup>

### III. AGRICULTURAL POLICIES

This section examines why Malawi has had a high rate of growth of exports, achieved through an estate oriented strategy, and why its smallholders have done poorly. It also examines why Kenya has performed the best in reconciling the objectives of growth with equity. Tanzania's performance has been poor both in terms of income generation for the poor as well as growth. We will also show why Tanzania's welfare-oriented policies had become unsustainable by the end of the 1970s. Our argument will be that the relative performance of the three countries is not explained by a single policy, nor indeed even by a few key policies that can be "fixed" relatively quickly. Rather a combination of macroeconomic and sectoral policies, structural factors influencing the mobilization of land, labor and capital and institutional and human capital factors brought to bear on the development and

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<sup>1/</sup> Support for these arguments is provided in Part II of the paper which focuses on the Bank's policy assessment, advice and lending in the agricultural sectors of these countries.

application of technology to smallholder agriculture all explain agricultural performance.

A. Natural Resource Endowments and Policy Choices

Agricultural performance is to a large extent determined by the quality of natural resource endowments. Land quality differences and regional differences in population densities, however, make intercountry comparisons difficult. In addition, each country uses a different classification system for categorizing land by agricultural potential. Table 11 presents rough estimates of the ratio of rural population to agricultural land for all three countries. Tanzania clearly has a much larger land resource base than Kenya and Malawi where land pressures are far greater. Only 26 percent of Kenya's land (sq. km.) is classified as agricultural compared to 56% for Tanzania and 38% for Malawi.

Aggregate figures can, however, mask considerable internal variation. Only 16% of the agricultural land in Kenya consists of Zone I and II ("humid and sub-humid" land), the primary area for production of high value cash crops such as coffee and tea. Another 29.3% consists of Zone III and IV ("semi-humid and transitional") land, suitable for basic cereals production.<sup>1/</sup> Finally, 54.7% of all agricultural land consists of Zone V and VI ("semi arid and arid") areas in which farming is mainly limited to

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<sup>1/</sup> The limited amount of good quality land is reflected in the size of holdings. Thus, the average size of Kenya's 1.7 million smallholdings is 2.3 ha.; over three quarters of these holdings are under 2 ha. By the year 2000, Kenya is projected to have only half an acre of high potential land per person.

Table 11

Population and Agricultural Land

	Kenya	Malawi	Tanzania
Total Land	56,416	9,300	88,360
Agricultural Land ('000 ha)	14,703	3,550	49,100*
Ag. Land as % of Total Land	26.1%	38.2%	55.6%
1984 Rural Population (millions)	16.0	6.0	18.4
Rural Pop./Hectare of Agric. Land	1.09	1.69	0.37

Source:

Land Areas: Kenya -- Farm Management Handbook of Kenya, Vol. II, as reported in Kenya: Agricultural Research Strategy and Plan: Priorities and Programs, Vol. II, Draft Report, ISNAR, March 1985.

Malawi -- Malawi Land Policy Study, 1986, Table 3.2.

Tanzania -- Agricultural and Rural Development Sector Study, 1974, Table 23 ("Agricultural Land" and "High Altitude Forest").

Population: International Financial Statistics (IMF), 1985.

Rural Population: World Development Report, 1986, and World Bank Annual Report, 1986.

\* If "Other Woods, Forests" is included, the area for Tanzania rises to 86,760 hectares.

subsistence production and (non dairy) livestock -- the latter especially in Zone VI.

While breakdowns for Tanzania using exactly the same categories are not available, it appears that while high quality land comprises only a small proportion of total land in Kenya, it is more abundant relative to Tanzania's endowment of this type of land.<sup>1/</sup> However, Tanzania clearly has proportionately vastly more of what is usually referred to as medium quality land suitable for rainfed annual cropping of various food crops, cotton, tobacco and certain perennials like cashews and sisal (in areas where in the 1950s and 1960s there was impressive growth through expansion of area under cultivation). Kenya has relatively little medium potential land of the quality enjoyed by Tanzania.

Malawi has proportionately more medium potential land than Kenya but proportionately considerably less than Tanzania. The important point about land quality in Malawi is that almost all of the best quality land suitable for tea and coffee is already under use and therefore there is virtually no room for smallholder expansion into these areas. There is land available that could be brought under smallholder tobacco production, however. The evidence suggests that much of this land, currently under estate control, is greatly underutilized. Thus, the issue with respect to increased smallholder acreage centers on reallocation of underutilized land rather than expansion into new unallocated areas.

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<sup>1/</sup> The situation is less clear in absolute terms. Tanzania may have almost as many total hectares of high quality land as Kenya with only a slightly larger population to support.

1. Smallholder Intensification:

As indicated in the Introduction, intensification of agriculture is considered in this paper in three different and interrelated ways: (i) a shift from low to high value crops on any given land; (ii) increase in yields per ha. of any given crop; and (iii) a geographical shift in production of crops from areas of poor land quality to those of higher land quality.

In view of the overall shortages of high quality agricultural land in Kenya, both external analysts of Kenyan agriculture and Kenyan policies have emphasized all three types of intensification of agricultural production as principal means of increasing employment and income generating opportunities. In contrast, the Malawi government's concern about smallholder intensification in the sense of shifting from low to high value crops and a geographical shift to high potential areas has been a relatively minor until recently. Tanzania has made major strides in geographically diversifying the production of maize, coffee and tea to the previously uninhabited high potential southern highlands from regions of Northern Arusha, Kilimanjaro and Bukoba. But its poor agricultural policies have generally arrested intensification. (In Part II of this paper we will show how donor policy analysis and investments reinforced domestic policy tendencies in Malawi and Tanzania in the 1970s.)

B. Small Versus Large Scale (or Estate) Production

How production units (small and large) are defined, how factors of production are mobilized, the prices at which those factors are mobilized, the markets in which produce is sold and the prices at which it is sold are all

policy issues that have major implications for the process of intensification. These topics are discussed in the sections below.

1. Defining "Large" and "Small"

Differentiating between small and large holders is important, but not easy. Apart from the problem caused by differences in land quality, conventions vary across countries with respect to definitions of small and large farmers. In Kenya, for instance, the definition of a smallholder holding (with significant implications for access to institutional credit) is one with less than 20 ha. Yet three quarters of all smallholder holdings are under 2 ha.

Different policy and institutional rules also apply to "small" versus "large". Thus, there are differences among countries in terms of the way in which the right to cultivate, own or transfer land, produce specific crops, and have access to the markets in which specific crops are sold are conferred by the government and/or traditional authorities. In Malawi, for instance, estates (regardless of size) are defined in terms of whether cultivation takes place on leasehold or (in a small number of cases) on freehold land or titled land. Customary right to cultivate and transfer the land through lineage, on the other hand, is conferred by the traditional tribal chiefs and this area is designated for smallholders.

The term estate infers a large scale farm, but this is not the case in Malawi where many estates are farming hectares similar to those of larger scale smallholders. Further, the size of estates has declined sharply overtime although, initially, the expansion of burley tobacco estates involved the very large farms. Since then the demand for "estates" has increased due

to the rent element they confer. It is for this reason that the distinction in nomenclature is significant. Rights to grow export crops such as burley and flue cured tobacco are conferred by the government through the granting of licenses to estates. Estates are also allowed to sell their crops in auctions at close to world market prices. But produce grown on customary land is sold to ADMARC at lower prices determined by the government. Access to input supply, credit and extension is similarly determined by the distinction in nomenclature.

In Kenya the right to grow certain crops is also restricted by licenses. Thus due to world market demand concerns, smallholders in Western Kenya were not permitted to grow coffee in the 1970s. However, on the whole titles to land and licenses to grow crops such as tea and coffee have been made far more freely available in Kenya in areas that formerly were European settled or were used as grazing land. For instance, the area under tea estates in Kenya increased from 19.6 thousand to 25.9 thousand ha. or a 1.8% annual growth rate between 1970 and 1985, but that under smallholder tea increased from 4.9 thousand ha. to 48.9 thousand ha. or at 15.3%. The area under coffee estates increased from 29.9 thousand ha. to 35.7 thousand ha. or 1.3% in the same period compared to that under smallholders from 54.1 to 116.3 thousand ha. at 5.5%. Data for total area under large scale farming for recent years are not available but there appears to be little reason to believe that much new area has been brought under large scale farming. On the contrary considerable numbers of large farms have been broken up over time and there is currently political resistance to expanding tea and coffee production through estates, although a general policy of expanding production of these crops has been adopted.

In Malawi on the other hand, the area under flue cured tobacco estates increased from 5.8 thousand ha. in 1970-71 to 16.3 thousand ha. in 1984-85, or at 12.1% annually, under burley tobacco from 7.2 thousand ha. to 22.6 thousand ha. or 14.3% annually, and under sugar from 2.6 thousand hectares to 14.9 thousand ha. by 1981-82 or 47.0% annually. It is noteworthy, however, that the area reportedly cultivated under burley is only 6 percent of the area licensed as estate land, reflecting substantial underutilization of land use.<sup>1/</sup> This alienation has been taking place in Malawi despite the fact that overall land pressure is greater than in Kenya. Table 12 shows both the increase in the amount of land under estate control in relation to total available arable land and the negative balance in arable land suggesting that smallholders may be cultivating marginal land.

## 2. Differential Marketing Institutions

We explore in this section the implications of the more diversified and more decentralized nature of the marketing institutions in Kenya and (to a lesser extent) Tanzania compared to Malawi. Both cooperatives and the private sector had played a more active role in the two countries than was true for Malawi. These differences are first outlined. Then we show that Kenya broadened the scope of its marketing arrangements to increase participation of small farmers, whereas Tanzania's policies created very great institutional instability in marketing institutions contributing to the growth of the parallel market in foodcrops. Malawi continued to have a relatively

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<sup>1/</sup> See C. G. Ranade, "Agricultural Marketing and Pricing in Malawi." Paper prepared for MADIA Study, January 1986 (Draft).

Table 12 \*

## AVAILABILITY OF LAND IN MALAWI

	(IN MILL HA.)			
	<u>NORTHERN</u>	<u>CENTRAL</u>	<u>SOUTHERN</u>	<u>MALAWI</u>
1. Total Hectares	2.66	3.51	3.13	9.30
2. Area Possible for cultivation under present technological limitations (1)	0.89	1.51	1.15	3.55
3. Customary Land under Agric. (1)	0.49	1.20	1.15	2.84
4. Area under cultivation in Customary Land (2)	0.14	0.68	0.51	1.33
5. Area under all estates				
1979 - 80 (3)	0.05	0.24	0.15	0.44
1984 - 85 (4)	0.11	0.44	0.23	0.78
6. Balance of Arable Land (5)	0.20	-0.25	-0.35	-0.43

1) Source: Malawi Agricultural Estate Sector, Devres Inc., 1979, p. 10

2) Source: National Sample Survey of Agriculture 1980-81, Vol. II, Government of Malawi, April 1984, p. 3

3) Source: Compiled from (a) Tobacco Control Commission and (b) Malawi Statistical Year Book, 1981

4) Source: Compiled from Records at Ministry of Agriculture, Government of Malawi

5) Row 2 - 0.10 x Row 2 (from infrastructure) - Row 3 - Row 5

\*This table is from C. G. Ranade, op. cit.

monolithic centralized marketing structure. This allowed cross-subsidization of the smallholder agricultural sector and provided a mechanism for resource transfers from the smallholder to the estate sector.

There are some differences and some similarities in the structure and diversity of marketing institutions responsible for various crops in each country. For instance, in all three countries the governments have a de facto monopsony on the purchase of cereals -- all have discouraged the role of the private trade in grain markets (on grounds of curtailing the activities of Asians or other African ethnic groups dominant in trade). Malawi went the farthest by formally mandating that Asians not reside in smaller towns and rural areas. Donors have however traditionally somewhat mistakenly viewed Malawi as a strictly private sector oriented country.

ADMARC, the only marketing board in Malawi (until 1973 the Farmers Marketing Board), buys all smallholder crops, whereas in Tanzania and Kenya there are separate marketing organizations for each major export crop grown by smallholders. The National Cereals and Produce Board (NCPB) in Kenya and the National Milling Corporation (NMC) in Tanzania have had responsibility for the purchase and sale of cereal crops in the 1970s either directly or through private or cooperative agents.

ADMARC's responsibility for buying all smallholder crops enabled it to cross subsidize maize producers from the proceeds of implicit taxation on tobacco, a possibility that Tanzania's and Kenya's maize parastatals have not had available (see Table 13). This partly explains the fact that the NCPB in Kenya and the NMC in Tanzania experienced substantial financial difficulties resulting from year to year fluctuations in official maize purchases and sales

Table 13 \*

ADMARCO'S PROFITS (LOSSES) ON CROP TRADE  
FOR 1971/72 TO 1983/84 (1)

(MILLIONS OF 1980 KWACHA)

<u>YEAR</u>	<u>TOBACCO</u>	<u>RICE</u>	<u>MAIZE</u>	<u>GROUNDNUTS</u>	<u>COTTON</u>	<u>GN PD</u>	<u>(LOSS)</u>
71/72	11.3	(0.4)	(0.1)	4.3	1.6	(1.2)	15.6
72/73	7.3	(0.3)	(0.1)	4.4	1.9	(2.7)	10.5
73/74	4.9	0.3	3.0	3.4	2.3	1.9	12.4
74/75	7.9	0.9	0.4	1.7	5.1	(2.5)	13.4
75/76	15.3	(0.0)	(4.3)	1.9	0.7	0.2	14.3
76/77	21.3	(1.5)	(2.2)	5.1	2.5	2.3	30.6
77/78	30.3	(1.0)	(2.3)	3.0	1.7	1.7	33.4
78/79	5.0	(0.2)	(4.0)	2.6	1.4	0.6	5.0
79/80	3.1	(1.4)	(4.3)	4.3	0.5	(1.2)	0.1
80/81	3.2	(1.4)	(4.5)	4.2	(0.3)	(0.4)	0.3
81/82	7.9	(0.6)	(4.4)	2.3	2.4	(0.5)	7.7
82/83	13.4	(0.3)	(4.1)	(0.6)	1.6	(0.3)	8.8
83/84	11.1	(0.4)	(4.6)	0.3	(0.3)	(0.4)	5.7

1) Data from 1971-72 through 1981-82 is from Hydd and Christiansen  
op. cit p 42

2) Data for 1982-83 and 1983-84 are from ADMARCO'S annual reports

\*This table is from C. G. Ranade, op. cit.

in the 1970s. The governments' failure to provide adequate working capital to these agencies contributed to their high interest payments and debts and the subsequent financial difficulties of these boards received considerable donor attention. In contrast, only when ADMARC's financial difficulties were accentuated by the rise in the maize producer price and the less than expected profits on the tobacco account due to lower world market prices in 1981 did ADMARC's pricing policies receive donor attention. ADMARC was considered efficient despite the substantial growth in its purchasing centers in the 1970s, which increased its overhead in much the same way as occurred in Tanzania and Kenya.

As in Malawi, export crop produce from small and large holders goes through different channels in Kenya (e.g., tea through KTDA and coffee through the coffee marketing cooperatives). Large private estates process and sell their own produce at local auctions and export directly to international markets. However, in Kenya there is no differential taxation of smallholders and estates for coffee and tea as reflected in the prices received by the two except for those resulting from differences in marketing costs where scale economies are enjoyed by estates. Because the Kenyan marketing agencies (the coffee cooperatives and KTDA) are generally quite efficient, the marketing margins are low in relation to actual costs. In Malawi on the other hand, the prices received by smallholders are considerably lower than those by estates in the case of tobacco mainly due to the price policy which has involved implicit taxation of tobacco as well as that of cotton and groundnuts. This is shown by the profits and losses made by ADMARC on the various crops as presented in Table 13.

The extent to which export marketing arrangements are stable and allow reflection of the world market conditions in the terms received by

producers also affects incentives for maintaining the quality of the export produce. At Independence, some exports such as coffee and sisal, produced by estates in Kenya and Tanzania, were handled on private account through local auctions (in the case of coffee) and direct sales in Europe. Asian traders handled food crops for small African farmers and sold rural consumer goods and agricultural implements to them. Marketing and credit co-operatives operated by smallholders were far more active in Kenya and Tanzania than in Malawi. Dairying, pyrethrum and coffee were handled by cooperatives in Kenya, as were cotton, tobacco and coffee in Tanzania.

In the case of export crops, especially tea and coffee, Kenya has retained and nurtured its earlier export marketing strategies consisting of local auctions in Mombassa and Nairobi and sales in European markets and has as well brought a large number of small producers into the process of export marketing. After the breakup of the East African Community and the closure of the Tanzanian border, Tanzania suffered from lack of access to the Mombassa tea auctions. In the case of coffee, Tanzania's bilateral sales outside the quota market increased, in part reflecting a poorer quality product. The quality of Tanzanian tobacco and cotton has also deteriorated due to poor handling and processing of the products, and poor export arrangements.<sup>1/</sup>

### 3. Taxation of the Smallholder Sector

We have seen that Malawi's exchange rate policies have been superior to those of Tanzania. In Tanzania the exchange rate appreciation explains the

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<sup>1/</sup> See 1983 World Bank Tanzania Agricultural Sector Report.

implicit taxation of export agriculture resulting in adverse effects on export crop production, as noted earlier. However direct taxation of smallholder agriculture has been prevalent in Malawi through ADMARC producer prices. This issue was overlooked until recently by analysts of Malawi's performance, who explained Malawi's good performance mainly in terms of the outwardness of the economy as reflected in Malawi's exchange rate and trade policies.<sup>1/</sup> The prices paid by ADMARC to smallholders for tobacco were as low as 13% to 27% of the international prices throughout the 1970s, whereas the estate producers selling on the auction floor enjoyed prices which were between 250 to 300 percent higher than those received by smallholders (see Table 14).<sup>2/</sup>

Profits made by ADMARC from paying low prices to smallholders were invested in estate agriculture and in Press Holdings with equity interests by President Banda. Table 15 shows the sharp increase in ADMARC's equity shares in estates from K.072 million in 1972 to K14.9 million in 1984, and in unsecured loans from K0.5 million to K3.0 million. The sharpest increases was in income notes in Press holdings during 1983 to 1984 from 0 to K29.2 million.

In Tanzania's case, at official exchange rates the nominal protection rates as reflected in the ratios of domestic to international prices were considerably better than those for smallholder tobacco producers in Malawi (see Table 16) but worsened in the 1970s. They recovered their 1970 levels in the early 1980s. However, given that the overvaluation of the Tanzanian

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<sup>1/</sup> B. Balassa, "Policy Responses to External Shocks in Sub-Saharan African Countries, 1973-1976," World Bank Reprint Series No. 270.

<sup>2/</sup> See C. G. Ranade, *op cit.* Quality differences in the types of tobacco require that these comparisons of the extent of discrimination be tempered to some extent. However, the general point holds.

Table 14 \*

Malawi: Average Tobacco Prices Paid to Estate and Smallholder  
Growers and Ratios of Average Producer Prices to Export  
Unit Values by Nomenclatures

(1970-81)

	Estate Tobacco						Smallholder Tobacco		
	Burley			Flue-cured			Dark-fired		
	Export Unit Value t/kg	Average Grower Price t/kg	Ratio of Grower Price to Export Unit Value	Export Unit Value t/kg	Average Grower Price t/kg	Ratio of Grower Price to Export Unit Value	Export Unit Value t/kg	Average Grower Price t/kg	Ratio of Grower Price to Export Unit Value
1970	106.30	62.58	0.59	134.30	83.69	0.62	83.70	20.50	0.24
1971	92.70	52.58	0.57	134.70	90.76	0.67	107.50	22.40	0.21
1972	78.50	55.56	0.71	144.40	89.15	0.62	100.00	23.40	0.23
1973	120.50	80.87	0.67	184.30	129.26	0.70	90.30	21.30	0.23
1974	162.50	109.46	0.67	224.10	148.90	0.66	116.80	21.00	0.18
1975	178.80	93.32	0.52	207.60	129.76	0.63	192.80	25.80	0.13
1976	156.60	103.35	0.66	236.40	147.84	0.63	225.50	29.50	0.13
1977	227.80	137.35	0.60	275.40	172.16	0.63	265.80	33.50	0.13
1978	196.10	115.72	0.59	311.90	171.25	0.55	211.50	42.10	0.20
1979	187.50	107.72	0.57	240.60	158.31	0.66	153.60	41.20	0.27
1980	137.00	117.74	0.86	195.30	100.95	0.52	157.60	41.90	0.27

SOURCE: Malawi Statistical Year Book, 1981 and Minster Agriculture Limited - Tobacco Industry Study, Vol. II 1983

\*This table is from C. G. Ranade, op. cit.

Table 15 \*

DETAILS OF ADMARC'S INVESTMENT AND LOAN PORTFOLIO  
1972, 1983 AND 1984  
(THOUSANDS OF 1980 KWACHA)

ITEM	VALUE AS OF			NET CHANGE (1972-84)
	1972(1)	1983(2)	1984(2)	
<b>1. Equity Shares (at cost)</b>				
a. Estate Agriculture	72	10,299	14,947	14,875
b. Estate Related Ind.	242	334	363	629
c. Non Estate Agriculture	95	1,354	1,321	1,226
d. Non Agriculture	<u>1,475</u>	<u>10,405</u>	<u>9,576</u>	<u>3,101</u>
Sub Total	1,884	22,942	26,712	24,825
<b>2. Debentures &amp; Other Secured Loans</b>				
	3,319	2,103	1,591	-2,223
<b>3. Unsecured Loans</b>				
a. Estate Agriculture	503	3,220	3,004	2,496
b. Estate Related Ind.	335	3,373	2,381	1,546
c. Press Holdings Ltd.	1,356	25,745	-	-1,356
d. Non Estate Agri.	378	204	133	- 240
e. Non Agriculture	-	<u>1,776</u>	<u>1,514</u>	<u>1,514</u>
Sub Total	3,079	34,823	7,037	3,953
<b>4. Income Notes (at cost)</b>				
a. Non Agriculture	-	2,127	1,342	1,342
b. Press Holdings Ltd	-	-	<u>29,206</u>	<u>29,206</u>
Sub Total	-	2,127	31,048	31,048
<b>5. Total Investment (at cost)</b>				
	3,732	61,995	66,333	57,606
<b>6. Less Provision for Diminution in value of Investment</b>				
	<u>2,037</u>	<u>2,732</u>	<u>2,361</u>	<u>324</u>
<b>3. Current Value of Inv.</b>				
	6,745	59,203	64,027	57,282

1) Source: Kydd and Christransen *op. cit.*

2) ADMARC'S Annual Report 1983 and 1984

\*This table is from C. G. Ranade, *op. cit.*

Table 16

RATIOS OF PRODUCER PRICES TO INTERNATIONAL PRICES  
FOR MAJOR SMALLHOLDER CROPS IN EAST AFRICA  
1970 TO 1985

	KENYA		MALAWI	TANZANIA		
	Coffee	Tea	Tobacco	Tobacco	Cotton*	Coffee
1970	0.91		0.30	0.78	0.73	
1971	0.90	0.79	0.33	0.84	0.61	
1972	0.98	0.77	0.29	0.84	0.57	0.57
1973	0.96	0.77	0.27	0.84	0.35	0.43
1974	0.97	0.67	0.20	0.68	0.33	0.43
1975	1.01	0.75	0.20	0.70	0.52	0.36
1976	0.96	0.74	0.23	0.65	0.42	0.30
1977	0.93	0.89	0.22	0.63	0.46	0.35
1978	1.02	0.85	0.30	0.70	0.56	0.39
1979	0.99	0.75	0.24	0.51	0.51	0.29
1980	1.04	0.85	0.23	0.47	0.53	0.41
1981	0.89	0.89	0.20	0.50	0.62	0.53
1982	0.82	0.86	0.18	0.50	0.73	0.52
1983	0.90	0.68	0.31	0.70	0.67	0.47
1984	0.83	0.98	0.28	0.55	0.65	0.47
1985			0.29	0.72	1.03	0.50

\*Seed cotton producer price converted to lint cotton equivalent using 34% conversion ratio.

Sources

International Prices: World Commodity Trade and Price Trends, 1985.

Kenya Coffee and Tea: Economic Surveys

Malawi Tobacco: ADMARC

Tanzania Tobacco and Cotton: MDB

Tanzania Coffee: IBRD (72-77), MDB (78-85)

shilling increased sharply by the end of the 1970s and the early 1980s (see Figure 3), the implicit taxation of agriculture had increased greatly in Tanzania.

It is also important to consider taxation of export crops relative to that of foodcrops competing in production. In this respect, while in Tanzania the ratios of cotton and tobacco prices to maize moved sharply in favour of maize by the end of the 1970s and early 1980s (see Table 17), they remained relatively stable in Malawi over the 1970s. In Tanzania maize showed even more favourable ratios if parallel market prices are considered as these prices were between 4 to 6 times as high in the early 1980s as the official prices. In Malawi, on the other hand, the higher incentives for export crops relative to those in Tanzania were eroded partly by the increased cost of purchased inputs (especially fertilizers) as a result of devaluation and removal of fertilizer subsidies (see Section III.G below).

The situation has been different in Kenya. Not only has the exchange rate not been greatly overvalued (see Figure 3), but in the case of tea and coffee -- Kenya's major exports -- smallholders have received more than 85% of the international prices, net of the costs of handling and processing (see Tables 16). Indeed, since the government is bearing the increased cost resulting from devaluations of the previous international loans of KTDA, rather than recovering them through an increased cess on tea, smallholder producers of tea are being subsidized, albeit inadvertently.<sup>1/</sup>

In all three countries partial price elasticities of supply appear to have been quite high (perhaps between 1 and 3) in the case of major export

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<sup>1/</sup> See Chapter II, Lele and Meyers, op cit.

Table 17

## TRENDS IN RATIOS OF EXPORT TO FOOD CROP PRICES IN KENYA, TANZANIA, AND MALAWI

	KENYA		MALAWI				TANZANIA			
	Coffee/ Maize	Tea/ Maize	Tobacco/ Maize	Coffee/ Maize	Grndnuts/ Maize	Cotton/ Maize	Cotton/ Maize	Tobacco/ Maize	Cshwnuts/ 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	11.3	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	ERR	5.57	3.56	2.10	6.30	2.42	6.75

## Sources

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Kenya: Economic Surveys

Malawi: ADMARC

Tanzania Cotton, Tobacco, and Cashewnuts: MDB

Tanzania Coffee: IBRD (72-77), MDB (76-85)

crops. Kenya's growth of tea and coffee hectarage is at least partly explained by the increase in the international prices of tea and coffee which the farmers received.<sup>1/</sup>

### C. Land Policies

In addition to those for land distribution other land policies have also been more supportive of productive smallholder farming in Kenya than in Malawi and Tanzania. The amount of land registered in Kenya increased from 1.75 million ha. in 1970 to 6.5 million ha. in 1983 constituting a quarter of the total cultivable land (i.e., in zones I to IV). The share of smallholders in total registered land was 43% overall but it was well over 80 percent in Western, Nyanza, Central and Eastern provinces, the heart of the smallholder production areas in Kenya. In addition to progress in land registration there is also an active land market in Kenya, although due to differential access to institutional credit and ethnic factors, land access is far from equal (The Bank's credit projects may have facilitated further inequality of land ownership through providing unequal access to credit).<sup>2/</sup>

In Malawi, on the other hand, there has been very little registration of customary land. Land registration has also not been encouraged in Tanzania. Tanzania formally abolished the traditional tribal village authority, replacing it with public ownership of land whereby an individual has no right of ownership or sale. Communal land rights nevertheless obtain

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<sup>1/</sup> These were accompanied by investments in the crucial agricultural processing sector for which the government borrowed from the World Bank. See Lele and Meyers, op cit.

<sup>2/</sup> See Lele and Meyers, op cit.

(at least informally) in most parts of Tanzania except in parts of Arusha, Kilimanjaro, Moshi and Iringa and Mbeya where coffee, tea, tobacco and estate agriculture prevailed. The government nationalized many private estates in the 1970s and prevented the development of further private property ownership in land as well as a land market.

Tanzania has, moreover, pursued another land policy which has been detrimental to production. Villagization, enforced without the consent of villagers, led by the middle of 1975 to the settlement of over nine million people or about 60% of the population into 6000 villages making "Operation Vijiji" the largest settlement effort in African history. Poor siting of villages and their large size increased the distances villagers had to walk to farms.

The introduction of communal cultivation following villagization came at a time of severe drought in 1973-74 and was achieved through minimum acreage laws. By the end of the 1970s agro-economic evidence had begun to accumulate that increasing doses of inorganic fertilizer and the introduction of block-farming would be unlikely to counteract the damage to the environment or reverse the decline in soil fertility being caused by continuous production on fragile soils without a substantial improvement in land resource management.

Increased walking distances to production units also increased the cost of fuelwood and caused deforestation and reduction in soil fertility. Deforestation had a major adverse effect on smallholder tobacco and pyrethrum production as obtaining fuelwood for curing these crops had become a greatly more labor intensive activity. Government also attempted to promote village wood lots with little response from producers. Attempts at collectivization

were followed by the local party bosses of TANU and later CCM dictating the amount of acreages that should be allocated to different crops as well as the type of husbandry practices that producers should follow.

#### D. Policies Affecting Labor Markets

Labor policies have profound effects on incentives to intensify crop production especially as export crops tend to be highly labor intensive. There are major differences in the way labor markets have evolved in each country.

Labor markets (including intra-rural ones) are quite active in Kenya. A minimum wage provides guidelines for rural earnings but does not hinder the growth of labor markets, especially in the smallholder sector. Hired labor accounts for as much as 50% - 60% of smallholder tea and coffee employment explained partly by an equivalent extent of urban male migration from smallholder families with females heading up rural households. While out-migration is high from the semi-arid parts of Kenya, where there are limited production and income generating possibilities, labor markets are surprisingly tight in areas of high value crops, despite the high growth rates of population and evidence of increases in real rural wages in tea and coffee areas since the early 1970s.<sup>1/</sup> The wage increase is, of course, partly explained by structural obstacles to the migration and settlement of populations from low potential areas into the highlands, constraints imposed by ethnic and political barriers.

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<sup>1/</sup> See Annex to the 1983 Kenya Basic Economic Report by P. Collier.

Malawi's minimum wages similarly do not hinder the growth of labor markets. On the contrary, prevailing discriminatory producer pricing, and the land policies mentioned above that have favored the estate sector, have limited income earning opportunities in the smallholder sector. They appear to have created a highly elastic supply of smallholder labor for wage employment in the estate sector, thus facilitating estate growth.<sup>1/</sup> Wage employment in the estates is estimated to have increased from 30,000 in 1969 to 148,000 in 1978. The total estimated wage employment in Malawi in 1983 was 387,000. This impressive growth still leaves about 60% of the total rural labor force that lives near subsistence existence. Not surprisingly, unlike in Kenya, the real rural wage rate in Malawi has not increased due to the fact that employment generating possibilities in the smallholder sector, which contain the bulk of the labor force, have been so limited.

In Tanzania, active implementation of a minimum wage, restrictions on interregional movements of labor, encouragement of trade unions in the case of estate agriculture, and the ideologically prompted discouragement of the use of hired labor by small and medium holder export crop producers (to avoid creation of a laboring class) have tended to create artificial labor shortages. This has provided a disincentive for the production of labor intensive crops such as coffee, tea, sisal, tobacco, etc. Indeed, crops such

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<sup>1/</sup> See R. E. Christiansen and J. G. Kydd, "The Political Economy of Agricultural Policy Formulation in Malawi, 1960-1985." Paper prepared for MADIA Study, January 1986. (Draft).

as tea and sisal have suffered from acute labor shortages (see 1983 Tanzanian Agricultural Sector Report).<sup>1/</sup>

E. Stability of Agricultural Service Institutions

We mentioned earlier that Kenya and Malawi have generally provided a relatively more stable institutional environment whereas in Tanzania there has been great instability of institutions. Disruption of marketing and processing arrangements has occurred in Tanzania due to many changes in institutional arrangements. These have involved first the discouragement of private traders in the early 1970s, then the rapid promotion and the subsequent abolition of cooperative unions (in 1976), then the establishment of crops parastatals followed by their abolition in 1983 and replacement with the cooperatives in the early 1980s, and then the creation of marketing boards with the introduction of some liberalization in agricultural marketing in 1985. In addition, Tanzania also decentralized its administration, which greatly reduced the role of the parent technical ministries such as agriculture. This had an especially adverse effect on agriculture as a result of the transfer of responsibility for planning and implementation, including control of the field staff, from the Ministry of Agriculture to the Prime Minister's office.

Tanzania's institutional problems have arisen as well from increased public sector control through a multiplicity of institutions. The number of

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<sup>1/</sup> The Amboni Sisal estate and the Tanzania Sisal Authority reportedly had to make do with an aging labor force in 1981 of persons ranging from 40 to 60 years old. The Bank funded smallholder tea development project similarly suffered greatly in the Bukoboa area where the hiring of migrant labor was discouraged by Government.

parastatals increased from 64 in 1967 to 373 in 1979/80 and over 1000 prices were controlled in 1979. In addition to the rapid growth of employment mentioned earlier, the management of parastatals suffered from ad hoc political interference and commandeering of public resources for party and political objectives, inadequate financial control, shortage of working capital and erosion of assets leading to a virtual lack of agricultural services.

There are indications that in recent years Kenya's institutional responses are also becoming politically prompted and thus more unstable and centrally directed. Like Tanzania, Kenya split the ministries of agriculture and livestock in 1980 and then reunited them, and recently shifted the responsibility for grain marketing from KFA (a cooperative of large European and African producers) to the Kenya Grain Grower's Association,<sup>1/</sup> a step Tanzania took in the mid-1970s by reducing the role of the Tanzanian Farmer's Association (TFA) consisting of large farmers in input marketing by declaring it a "private" institution.

#### F. Agricultural Research

Kenya and Malawi both have excellent agricultural research systems for their major export crops financed through a cess on the crops, i.e., tea, sugar and tobacco in the case of Malawi and coffee and tea in the case of Kenya. One indicator of the productivity of research systems is the specific innovations they generate. Clonal teas were developed and issued by the Tea Research Foundation in the late 1960s in Kenya and the Coffee Research

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<sup>1/</sup> This now includes all producers. While this approach is more participatory, it is also more inefficient.

Foundation has recently issued a new CBD resistant variety of coffee, Ruirii II. The research systems for foodcrops and those export crops in which the three countries are marginal exporters or importers, e.g., sugar, cotton etc. have, on the other hand, suffered from uncertain general budgetary support, too rapid a pace of indigenization of research management, frequent staff turnover, lack of clear research priorities, too many research stations and fragmented donor support for various low priority activities.<sup>1/</sup>

Although very weak on adaptive on-farm research, Kenya's hybrid maize program has nevertheless been quite successful in developing an effective improved seed distribution program and facilitating rapid adoption of hybrid or improved maize. Sixty percent of area under maize in Kenya was under improved maize at the end of the 1960s. This cannot be said for the hybrid maize research program in Malawi.

Malawi's national research system was reorganized in 1986 under the auspices of the National Agricultural Research Project funded by the Bank. A similar reorganization is under active consideration in Kenya under the umbrella of a World Bank funded project involving several donors. Tanzania's research system has been the weakest even for export crops such as tea and coffee. One reason is that Tanzania suffered from the break-up of the East African community upon which it had depended for research input on export crops prior to the community's break-up when sub-research stations only were

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<sup>1/</sup> See D. Jha, "Diffusion and Generation of New Agricultural Technology in Africa," Paper Prepared for MADIA Study. June 1986. (Draft); K. Anthony, "UK Agricultural Research AID to Kenya, Tanzania and Malawi." Paper prepared for MADIA Study. January 1986. (Draft).

located in Tanzania. Cotton research suffered from the sudden withdrawal of the British Cotton Research Corporation (CRC) in 1975.<sup>1/</sup>

Tea and tobacco research has similarly been weak in Tanzania due to the shortage of qualified personnel, severe recurrent budgetary shortages, lack of foreign exchange for importation of critical supplies and breakdown of the transport system, which has greatly inhibited supervision of field trials.

The fragmentation caused by donors is equally prevalent. In 1981, a regional research station in Mbeya supported by the Nordics had a budget larger than the entire national agricultural budget. Unfortunately, although the World Bank and the USAID took an early lead in the reorganization of the research system in 1979, due to internal political difficulties Tanzania never made the basic political decisions necessary to act on this effort. The current stagnant or declining crop production and deteriorating quality of marketed produce is at least partly a result of the poor quality of Tanzanian research.

#### G. Fertilizer Policies

Increased use of fertilizer along with improved planting material is frequently an important source of growth in factor productivity. Fertilizer supply and pricing policies are therefore of considerable interest in understanding the sources of production and productivity increases. The profitability of fertilizer use is determined by the relative prices of fertilizers and crops and by the nature of the production function as

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<sup>1/</sup> See J. Howell, op cit.

reflected in input/output coefficients. Fertilizer subsidies often have been considered an acceptable way of promoting fertilizer use in the crucial learning period of early adoption when adoption risks are high.

The historical trends in the nutrient price/maize price ratios faced by smallholders in Malawi, Kenya and Tanzania are compared in Table 18; ratios for a few selected Indian states are also presented in that table for illustrative purposes. The most striking aspect of Table 18 relates to the contrast between the ratios for Malawi on the one hand, and those for Kenya and Tanzania on the other. Not only are the ratios for Malawi (in the 9-10 range) generally much larger than those for Kenya (4-5 range), but they are also characterized by a substantial increase over time.<sup>1/</sup> These differences in ratios are all the more striking in light of the fact that fertilizer response coefficients in the areas most favourable for maize production in Kenya are about 30% higher than the best responses in Malawi. Parenthetically, it is also interesting to note that the ratios for the Indian states are similar to those for Kenya and Tanzania.

Table 19 compares the maize and nutrient prices used to compute the above price ratios for the three countries.<sup>2/</sup> In most years covered by the data, the maize prices prevailing in Kenya (more closely approximating the international prices) were substantially higher than those in Malawi at the

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<sup>1/</sup> Thus, maize smallholders in Malawi have needed to sell 9-10 bags of maize in order to buy one bag of nutrient. Their counterparts in Kenya and Tanzania (or for that matter in the Indian states) have needed to sell only 4-5 bags of maize.

<sup>2/</sup> Note that since the fertilizers used on maize vary by country -- i.e., CAN in Malawi, DAP in Kenya and urea plus TSP in Tanzania -- the prices are expressed in nutrient terms to facilitate comparison.

Table 10

Nutrient Price/Maize Price Ratios for Malawian, Kenyan and Tanzanian  
Smallholders, and for Selected Indian States\*

	Malawi <u>a/</u> (SA/CAN)	Kenya <u>b/</u> (DAP)	Tanzania <u>c/</u> (UREA+TSP)	Selected Indian States (Urea) <u>d/</u>			
				Andhra Pradesh	Madhya Pradesh	Rajasthan	Uttar Pradesh
1972-73	7.5	--					
1973-74	5.9	6.2					
1974-75	14.9	3.4					
1975-76	9.5	5.3					
1976-77	9.6	5.5					
1977-78	9.7	4.2					
1978-79	10.1	4.5	4.5				
1979-80	7.9	5.5	4.5	3.8	3.3	3.0	3.3
1980-81	9.4	5.9	5.2	4.8	4.5	3.7	4.4
1981-82	7.7	5.0	3.8	5.1	4.7	3.9	--
1982-83	9.4	4.2	3.3	4.7	4.3	4.1	--
1983-84	9.0	5.0	--	--	--	--	--
1984-85	9.8	--	--	--	--	--	--
1985-86	11.9	--	--	--	--	--	--

\* The product prices of S/A (21-0-0), CAN (26-0-0), DAP (18-46-0), Urea (46-0-0) and TSP (0-46-0) are transformed to reflect the nutrient contents of these fertilizer types, i.e., the ratios are computed as:

$$\frac{\text{Price of 1 kg of nutrient}}{\text{Price of 1 kg of maize}}$$

- a/ Based on the smallholder price of S/A for 1972-73 to 1982-83 and of CAN for 1983-84 to 1985-86, and the ADMARC purchase price of maize.
- b/ Based on the F.O.R. Nakuru price of DAP and the official price of maize.
- c/ Based on the average price of urea (unsubsidized) and TSP (subsidized) and the officially announced producer price of maize.
- d/ The ratios are based on the official Government of India price of urea, and the farm harvest price of maize in individual states. The official price of urea is inflated by 15% to account for distribution costs that may be passed on to farmers.

Table 19

Comparative Maize and Nutrient Prices for Smallholders in Malawi, Kenya and Tanzania\*

	MAIZE a/			NUTRIENTS b/			
	U.S. c/ Gulf Ports (f.o.b.)	Malawi	Kenya	Tanzania	Malawi	Kenya	Tanzania
		(US\$ per m.t.)			(US\$ per m.t. of nutrient)		
1972-73	98	41	--	--	307	246	--
1973-74	132	52	56	--	309	349	--
1974-75	119	51	101	--	759	337	--
1975-76	112	61	108	--	582	567	--
1976-77	95	60	107	--	577	564	--
1977-78	101	62	112	--	604	466	--
1978-79	115	64	120	115	648	542	517
1979-80	126	83	99	122	655	548	548
1980-81	131	80	140	122	750	825	632
1981-82	115	122	140	180	944	701	683
1982-83	136	97	138	183	912	574	594
1983-84	136	92	127	--	829	637	--
1984-85	111	78	--	--	762	--	--
1985-86	103	73	--	--	870	--	--

\* The prices have been converted from local currencies to US\$ using the official exchange rates as published by the IMF.

a/ ADMARC price of maize for Malawi, and the official prices for Kenya and Tanzania.

b/ Based on the smallholder price of S/A for 1972-73 to 1982-83 and of CAN for 1983-84 to 1985-86 in the case of Malawi; the f.o.r price of DAP in the case of Kenya; and the average price of urea (unsubsidized) and TSP (subsidized) in the case of Tanzania.

c/ U.S. No. 2 yellow. 1972-73 refers to 1972, etc.

official exchange rates; the exceptions were 1973-74, 1979-80 and 1981-82 when the Kenyan prices were only somewhat higher.

At the official dollar exchange rate, the maize prices in Tanzania, too, exceeded those in Malawi by a considerable margin. The Tanzanian maize prices became higher than even the Kenyan ones in 1981-82 and 1982-83. However, because of Tanzania's currency overvaluation the dollar price of Tanzanian maize would be lower at a real effective exchange rate.

Turning to the nutrient price differentials, once again at the official exchange rates, Malawian smallholders come out at a disadvantage relative to their Kenyan and Tanzanian counterparts. In 1973-74, the nutrient prices were lower in Malawi than in Kenya. But since 1974-75, when they increased two and one-half times over the 1973-74 level, the nutrient prices in Malawi have been higher than those in Kenya; this is despite fertilizer subsidies having existed in Malawi throughout the period in question, whereas in Kenya they ended in 1976.<sup>1/</sup>

The main conclusion arising from this analysis is that the nutrient price/maize price ratios for Malawi are out of line with those for Kenya and Tanzania, because Malawian smallholders pay higher nutrient prices and they receive less for their maize from ADMARC. These prices appear to reflect differences between Malawi and Kenya in internal transportation costs, differences that in turn reflect the Southern African political situation (which has prompted the closing of the Beira and Ncala routes) -- a variable that is beyond the control of small farmers in Malawi.

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Fertilizer subsidies in MADIA countries are discussed in a forthcoming paper by U. Lele and V. Bindlish.

Fertilizer prices in Malawi need to be considered in light of the fact that Malawian smallholders have few production alternatives to growing maize. In Kenya more than two thirds of the fertilizer used by smallholders is accounted for by export crops (especially tea and sugar), which have very high output/nutrient price ratios; similarly, in Tanzania export crops account for 50% of the total smallholder use of fertilizer. In Malawi, on the other hand, nearly 85% of the fertilizer used by smallholders is on maize.

It is difficult to estimate the growth of fertilizer use on a comparative basis across countries as data on fertilizer use by crop is not readily available except from occasional surveys. Also, the composition of nutrients has changed over time and thus data on fertilizer imports and supply from various sources present conflicting figures. Moreover, fertilizer is often subsidized and directed toward use on certain crops, areas or types of farms by fiat, but alternative more profitable uses lead to its diversion to other areas; the extent of such diversion is usually not known. For instance, estimates of leakages of fertilizer to the estate sector in Malawi from subsidized supplies for smallholders vary from 10 to 25 percent. It is also not clear how much of the fertilizer in Tanzania provided by crop parastatals for export crops is diverted for use on foodcrops. Bearing these measurement problems in mind, our best judgement (based on field investigations) is that smallholder use of nutrients on maize in Kenya is now plausibly only half as much as in Malawi, which but is similar to that in Tanzania. This may be the

result of both inadequate foreign exchange allocations in Kenya for fertilizer imports as well as fertilizer's greater profitability in coffee and tea production.<sup>1/</sup>

Tanzania's fertilizer use was considerably higher than Malawi's in the early 1970's. However, it declined at the rate of 0.3% annually since then. On the other hand, fertilizer use has increased annually by almost 6% in Kenya and by over 3% in Malawi.

The rather low rate of growth of maize and other smallholder crop production in Malawi contrasts strikingly with the considerable growth in smallholder use of fertilizer. This contrast raises important questions concerning the reliability of estimated fertilizer response coefficients, maize crop production figures, estimates of fertilizer use in the smallholder sector and, more generally, the factors affecting fertilizer use both within a single country and across countries. It seems clear that unless a substantial investment in primary data collection is made to investigate these various important issues, few insights are likely to result concerning the factors affecting levels of fertilizers use, and the impact of policies on these levels, from simply reshuffling the existing data.

In spite of the uncertainties enumerated above, in the case of Malawi it can be argued that higher fertilizer prices will likely result in a reduction in fertilizer consumption, in substitution of land and labor for fertilizers in the production of subsistence crops, and in setting back progress toward achieving the Bank-supported objective of crop diversification

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<sup>1/</sup> It should be noted, however, that tea mainly uses nitrogenous fertilizers, whereas maize uses mostly phosphetic. Thus, there is not an obvious clear substitution in use that is efficient.

into higher value export crops. Though changing crop licensing and producer pricing policies in Malawi will increase incentives for use of fertilizer on high value export crops, fertilizer subsidies nevertheless need to be considered on a selective basis. For example, there is no reason why the cost of fertilizer distribution in Malawi should not be subsidized rather than its price. Thus, to be fully effective, the principle of subsidy abolition needs to be applied selectively, involving careful analysis of its possible impact before rather than after policy prescriptions on abolition of subsidies are made.

#### Concluding Comment

This section of the paper (Part I) has reviewed the contributions of macroeconomic, sectoral and domestic agricultural policies to agricultural development in each of the three countries. We have indicated the ways in which individual policies as well as various combinations of policies have influenced the nature and structure of agricultural growth in each country.

The policies reviewed in this section of the paper have provided the context in which World Bank policy advice and lending have operated. They have influenced, and have also been influenced by, the Bank's activities in each country. Part II which follows reviews the results of the Bank's policy advice and lending experience in light of the policy environment in each country outlined in Part I.