

MADIA

BRITISH AID TO AFRICAN AGRICULTURE

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This chapter is primarily concerned with the impact of UK bilateral aid on the agricultural development of three countries: Kenya, Tanzania and Malawi. There is also an attempt to put such aid in the longer-term context of British colonial support for African agriculture; and post-independence agricultural aid is also considered in the wider context of UK aid policy and its administration.

In the first section of the chapter, the several different forms of UK agricultural aid are described and there is a discussion of expenditure trends in agricultural aid to sub-Saharan Africa since 1970. Changes in the overall aid policy context are also examined and related to support for African agriculture. In the subsequent three sections, the composition and impact of agricultural aid in the three countries is investigated and particular attention is given to those aid interventions which illustrate some of the distinctive characteristics of British agricultural aid in the period since 1970: (a) support for agricultural research and for agricultural technical services and inputs supply more broadly; (b) investment in smallholder export crop schemes; (c) support - particularly in the 1970s - directed towards area-based 'integrated rural development' projects; and, (d) the supply of programme aid in the 1980s, in support of economic policy reform directed at the agricultural sector. In the concluding section, ODA's record in these areas in the the three countries is reviewed and lessons are drawn on the relative strengths of different components of the agricultural aid programme and the possible relative strengths of UK agricultural aid within overall donor assistance.

THE CONTEXT OF AGRICULTURAL AID

Components and Expenditure Trends

The bilateral agricultural aid programme can be split into several categories. Within the general head of Financial Aid (see Table 1) the most important categories are project aid, programme aid (or import financing for countries with balance of payments difficulties), and concessionary finance made available to the Commonwealth Development Corporation (CDC), a statutory body established in 1948 to promote development by commercial investment in agriculture and other sectors. Within the general head of Technical Cooperation, the most

important categories have been the supply of personnel to governments or other public bodies overseas and the training of developing country nationals in the UK.

A further important category of agricultural aid (which is not allocable by country) is grant support for tropical agricultural research and other services based in the UK. This expenditure is channelled primarily through Research and Development funds to ODA's Scientific Units, notably the Tropical Research and Development Institute (TDRI) and the Land Resources Development Centre (LRDC), which were amalgamated in 1987 to form the Overseas Development Natural Resources Institute (ODNRI).

In the period since 1975 (when contributions to EEC aid began) there has been a substantial growth in the UK's multilateral aid. By 1987 the share of multilateral aid had risen to 42 per cent of the total programme from a figure of around 10 per cent in the early 1970s. Partly as a consequence, the UK bilateral programme in sub-Saharan Africa is now only the ninth largest source of donor support, having been a dominant donor - with France and the World Bank - in the early 1970s.¹ However, within a shrinking global bilateral programme, the share of aid directed to sub-Saharan Africa has risen from around 30 per cent in the 1970s to 47 per cent in 1987, making it the largest recipient region.

Within this provision to sub-Saharan Africa, project aid has generally maintained its importance, over the period since 1970 although since 1985 there has been an increase in the share non-project aid due to both disaster relief and a new emphasis on programme aid. Within the share of project aid, expenditures on agriculture and natural resources have declined in the 1980s. Similarly, the level of CDC commitments to agriculture in the sub-Saharan region has declined since the late 1970s,² reflecting declining agricultural investment opportunities, especially in new smallholder crops.

There has also been a steady decline in the numbers of technical assistance personnel working in sub-Saharan Africa. In 1972, there were 740 officers in post in agriculture, most of whom were in supplemented government posts. In 1985 there were 154, mainly on a fully-

Table 1: UK Official Bilateral Aid to Sub-Saharan Africa 1970-87, £mn

(major components allocable by country)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	
<u>Financial Aid</u>																			
Project Aid	21	23	21	18	18	24	26	24	34	55	49	72	73	63	61	52	43	39	
Aid and Trade Provision	-	-	-	-	-	-	-	-	-	-	2	6	8	8	6	1	7	10	
Programme Aid	-	-	-	5	9	7	4	9	23	39	35	32	33	21	17	28	43	53	
Debt Cancellation	-	-	-	-	-	-	2	2	2	2	29	21	12	12	15	17	18	16	
Other Non-Project Aid	15	10	5	-	-	-	8	7	31	8	10	9	12	14	19	61	28	25	
CDC Project Loans	5	9	7	10	15	11	16	24	27	29	33	26	23	28	49	35	31	32	
TOTAL FINANCIAL AID	41	42	33	33	42	42	54	66	117	133	158	166	161	146	167	195	171	174	
<u>Technical Cooperation</u>																			
Personnel	15	17	19	24	23	24	35	33	37	46	49	50	41	43	44	43	36	33	
Students and Trainees	2	2	3	3	4	6	8	8	11	15	25	20	24	25	24	31	31	33	
Consultancies and other TC	1	1	1	4	3	4	4	4	6	9	11	10	9	10	11	16	30	44	
TOTAL TECHNICAL COOPERATION	18	20	23	31	30	34	47	45	54	70	86	80	74	78	79	90	97	110	
TOTAL BILATERAL AID	59	62	56	64	72	76	103	111	171	203	244	246	235	224	246	285	286	284	

Source: Statistics Dept., Overseas Development Administration

funded advisory basis. There was a decline, after 1980, in real expenditure to support tropical agricultural research in the Scientific Units, although the grant position stabilised after 1986, and grants to the International Agricultural Research Centres increased over the period.

The data on UK aid since 1970 does not, however, indicate any major changes in priority accorded to agriculture in sub-Saharan Africa. Although there are some indicators of diminishing support for particular forms of aid at different periods, there has been a steady increase in aid to multilateral institutions (such as the World Bank, IFAD and the EDF) which have given emphasis to African agriculture, and there has been a substantial increase in the mid-1980s in bilateral programme aid which, in large part, is intended to facilitate policy reforms in support of agriculture.

Within the agricultural sector, there have been some adjustments of ODA priorities for sub-Saharan Africa over the period although there are a number of long-standing areas of UK agricultural aid interest. In the period immediately following the independence of former British colonies, national and regional agricultural research services were given UK assistance in the form of budgetary support and the supply of staff. Project aid began to be substituted for budgetary aid in the late 1960s, and ODA moved away from sustaining research programmes and institutions towards solving specific problems. Moreover, Research and Development funds were allocated towards projects intended to have a regional applicability, and increasingly grants have been concentrated on UK-based research.

There had been a particularly strong colonial legacy of export crop research and services but in the independence period direct ODA support declined as the industries concerned and the Commonwealth Development Corporation assumed more importance, although often with some UK technical assistance. Emphasis shifted towards food staples in the 1970s although by this time the emergence of the CGIAR centres reinforced the British decision to remain apart from long-term research programmes of plant-breeding and to concentrate upon 'problem-solving' where the strengths of the Scientific Units, particularly the former Tropical Development and Research Institute (TDRI), have been particularly evident. TDRI itself was formed by the

merger in 1983 of the Centre for Overseas Pest Research (COPR) and the Tropical Products Institute (TPI), both of which had their origins in the colonial period.

TDRI has been particularly concerned both with post-harvest technology - quality control, processing, storage and marketing - and with pest and vector management and its work straddles both research and technical services more widely. These services, however, are one part of ODA's involvement in 'public sector agricultural supply' for which there have been several different forms of aid support. In project aid, the most important components have been the provision of planting materials and breeding stock, animal health services, crop protection services and soil conservation services and minor irrigation. In training aid also, British Council data indicates a strong bias towards courses at ODA-supported research centres on seed technology, pest management, crop storage, agricultural engineering and veterinary services.³ It is argued subsequently that the main successes of UK agricultural aid have come in technical services and inputs supply, including the work of CDC which has made major contributions in the provision of farm inputs for selected crops and in developing seed industries.

Since the mid-1960s CDC has specialised in extending to smallholders the production of exportable crops such as tea, coffee, sugar and flue-cured tobacco. This has generally involved the provision of capital for development of scheme infrastructure, processing capacity and working capital, along with technical and managerial support to provide the supply of inputs and production services (such as field preparation, extension and crop marketing). CDC - together with ODNRI and its predecessors - provide UK agricultural aid with much of its distinctiveness and CDC, in particular, represents the main component, in financial terms, of British agricultural support for several African countries. For example, CDC's loan finance for the production and processing of sugar and tea constitute a large part of agricultural project aid in Malawi and Kenya.

Despite this emphasis, critics of UK agricultural aid (such as some of the NGOs and the environment lobbies) are wrong in claiming that British aid has neglected 'peasant' agriculture and the production of food staples, at the expense of mechanised farming, modern irrigation,

plantation crops and the use of imported chemicals, vaccines and fertilizers. It is the case that expenditure on 'integrated rural development' has fallen away in recent years, and it is also the case that within such projects there has been a disappointing level of impact on peasant incomes and production, but it is simply not the case that ODA has given priority in its aid allocations to modern, commercial agriculture of the sort associated with plantation companies and large estate owners at the expense of food staple production by peasant producers.

Similarly, it is not the case that ODA has neglected to finance investment in the export crop sector because of an over-emphasis upon improving the welfare and incomes of cultivators and herders in the traditional sector and in marginal environments. Within a generally shrinking programme of bilateral project aid support for agriculture, proportions of spending in the period since 1970 have been broadly maintained between 'traditional' and 'modern' agriculture, between high potential and low potential areas, and between export crops and domestically-consumed staples.

Aid Policy

The broader aid policy context of UK support for agriculture in sub-Saharan Africa has undergone some shifts in emphasis since 1970. In 1975 a White Paper on The Changing Emphasis in British Aid Policies committed the government to a poverty-oriented programme which would have 'the most effect in alleviating the worst poverty over the long term'. The main instrument in achieving this was to be the placing of an increasing emphasis in bilateral aid on the poorest countries especially those most affected by the rise in the price of oil and other commodities. A subsidiary objective was to assist the poorest people in the poorest countries, particularly in the 'large, very poor, and mainly rural, traditional sector'.

One thrust of the new approach involved support for a number of 'integrated rural development' projects, particularly in sub-Saharan Africa. Many of the concerns for developing subsistence farming in Africa were voiced in the UK in the 1960s before poverty-focussed integrated rural development became widely commended by donors. These concerns were later evident in the White Paper which represented

a more comprehensive statement of the IRD case than either the World Bank or FAO had formulated at that time. The Paper expressed the need to address simultaneously the constraints in several sub-sectors in production and welfare; to develop local level planning and implementation capabilities; to accept the need for patience and flexibility in technological development and in institutional arrangements; to consider more finance for local cost components; and to look for new skills in understanding rural household economics.

In practice, however, it proved difficult to initiate ODA poverty-focussed integrated rural development projects and 'more help to the poorest' in practice often meant either conventional projects which fitted poverty focus requirements or support for area-based programmes already identified by governments or other donors particularly the World Bank. A number of IRD projects in Africa were started in these circumstances and this similarity served - as discussed below - to over-simplify the lessons that were drawn from the disappointments of the projects begun in the mid to late 1970s.

The major policy change of the new government from 1980 onwards was to introduce a stronger commercial and domestic industrial element into the aid programme. This reflected the concern of virtually all aid donors to use the aid programme to help secure or protect their market share in developing countries and one element of this policy - the Aid Trade Provision - was introduced in 1977 before the change of government and before the deepening of world recession.

The impact of the emphasis upon UK commercial considerations on aid allocations to African agriculture is difficult to capture. The share of ATP allocations in the aid programme has continued to expand and none of the 82 ATP-related sales between 1978 and 1985 were in agriculture in sub-Saharan Africa. Furthermore, the share of the agricultural sector in project aid declined in Africa after 1980 with the growth in aid to the power and transport sectors. Yet against this evidence has to be set the difficulty experienced by ODA in identifying suitable opportunities for agricultural project investment. It was this difficulty - rather than commercial and industrial pressures - which contributed to a shift in emphasis away from project aid support towards programme aid.

This shift can be traced to the early 1980s when evidence on Africa's deteriorating economic performance pointed to the poor returns to aid-assisted project investments. ODA, like other donors, took the view that most governments were proving incapable of maintaining at economic levels much of the physical infrastructure and public services which had been built with external aid; and that both productive investments and domestic financing capacity was being undermined by public policies inimical to growth. The agricultural sector was considered to be particularly disadvantaged by prevailing government policies.

In ODA, these constraints on effective use of project aid funds led to a renewed interest from 1981 in 'sector aid', whereby several aid instruments are used together. Sector aid is designed in part to rehabilitate production in sectors such as agriculture and from 1983 there was also an attempt to regenerate manpower aid. Although the reduction of manpower aid had been deliberate policy from the late 1970s, an ODA review in 1983 made the case for an enhanced programme in training and manpower provision. The withdrawal of expatriate manpower was seen as a contributing factor to the deteriorating performance in public institutions and the review argued that UK aid should be directed towards re-building those institutions whose 'efficient functioning is critical to development'. Much more important in financial terms, however, was a substantial shift into programme aid linked to conditions of policy reform designed to enhance agricultural output and in particular agricultural export earnings.

None of these instruments of policy were new but together they represented a move away from identifiable project initiatives. A ministerial Commons statement in 1985 confirmed this emphasis in relation to sub-Saharan Africa. This noted three main elements: a) fast-spending programme aid to support economic policy reform, b) the strengthening of public institutions through increased manpower and aid training, and c) a package of assistance to rehabilitate key sectors of the economy.

Current UK policies on programme aid mirror, albeit imperfectly, other forms of non-project aid which were important in the 1960s and early 1970s, and which included formal non-project related conditions agreed with the receiving government and relating to agricultural and

domestic public expenditure policies. Examples include the Land Transfer Programme in Kenya and the last years of budgetary aid in Malawi. In the 1970s there are fewer examples of programme aid and these were often designed (as in Tanzania) largely to relaunch a suspended bilateral programme and provide balance of payments assistance. However, such programme aid allocations did not have either a specific agricultural focus or a framework for macro-economic policy change.

Aid Mechanisms

The initiative for identifying and developing new agricultural projects and programmes is left substantially to officers working at ODA's Development Division level within the main regions (which include Eastern Africa, based in Nairobi, and Central and Southern Africa, based in Lilongwe). In countries such as Malawi in the early 1970s, when ODA had a large number of Technical Cooperation Officers (TCOs) serving in governments and a spread of small projects in the agricultural sector, project proposals were often instigated by TCOs working within their Ministries. However, in the latter 1970s a number of ODA agricultural projects in the region had their origins in preparation or appraisal documents prepared by other donors, particularly the World Bank. For example the Tabora Land Use Project (in Tanzania) and the Bura Irrigation Project (in Kenya) were components of larger projects prepared in advance of a formal ODA identification mission. The major area-based projects in all three countries were also a response to national programmes within which individual bilateral donors were invited to consider support for specific regions or districts.

An ODA evaluation of project procedures in 1983⁴ argued that, particularly in the more complex agricultural projects, more careful preparation should be taken over design and appraisal stages and that a broader disciplinary approach should be adopted (meaning additional advisory inputs). It is evident, however, that while other agencies (such as the World Bank) have been willing to commit more substantial resources of time and staff to project preparation, they have also run up against the difficulty of designing projects for developing the traditional systems of crop and livestock production in Africa.

Despite some reductions in the advisory cadre following a 1980 Management Review, the ratio of ODA Natural Resources Advisers to volume of agricultural spending has in fact increased over the period, as has the ratio of advisers to technical assistance posts overseas.⁵ But this apparent lightening of the load of NR Advisers should not be taken at face value. Advisers have a larger programme of monitoring work than in the past when smaller projects were more often monitored simply by reports from ODA-appointed TCO project managers and when ODA projects were often administered by British supplemented staff within Ministries.

AGRICULTURAL AID TO MALAWI

The Colonial Legacy

The main agricultural legacy of the British colonial period in Malawi (or Nyasaland) was an export-orientated estate sector whose growth had been facilitated by transport investments and supported by research services in crops such as tea, cotton, and tobacco. Smallholder export crops also received some official encouragement. For example, by the end of the 1930s, the cotton industry had become reliant primarily upon African smallholder production, and dark-fired tobacco production had been stimulated by a Native Tobacco Board established in 1926. However, it was not until the 1950s that the colonial government promoted African smallholder production on any scale.

Broadly speaking, there were two simultaneous approaches. First, there were export crop production schemes (for tea, tobacco and confectionary nuts, for example) based on expanded research, marketing services and transport improvements. Second, a few small intensive area development projects were introduced based on land consolidation and some soil conservation.

Chitedze Research Station was established in 1950 to serve small-scale farmers in the central region and five smaller stations were opened to cover the main ecological regions. A programme of cattle selection and management was also begun. A new station for tea research was opened at Mulanje in 1949 (which became the responsibility of the Tea Association in 1959) and Malawi joined the Federal Tobacco Research Board in 1954. An Agricultural Research Council of Rhodesia and

Nyasaland was founded in 1959 to reinforce agricultural research in Central Africa. This survived the break-up of the Federation but was ultimately dissolved in 1967 when Malawi responded by setting up its own Agricultural Research Council.

In the 1940s extension services in Malawi were provided to African farmers, although work was largely confined to soil conservation measures, and legislation was introduced in 1946 to prescribe and enforce conservation practices on what was seen as a serious rate of exhaustion of land under prevailing cultivation and tenure arrangements. It was held that, in high density areas, fundamental changes were necessary in husbandry practices, the physical layout of land holdings, and land tenure, before sustained increases in productivity could occur. As a result, a number of 'intensive' land schemes were introduced (which subsequently often involved the settlement of 'Malawi Young Pioneers' from agricultural training centres). But the most important scheme of land consolidation and development was the Lilongwe Land Development Project (LLDP). The four Integrated Rural Development Projects (IRDPs), instigated after independence with World Bank support, followed the intensive area development model and were a direct legacy of the colonial schemes. ODA continued to support the LLDP although it was not until the late 1970s that British agricultural aid expenditure became heavily concentrated on the National Rural Development Programme (NRDP) which itself had evolved from IRDP experience (see below).

Trends In Agricultural Aid

At independence in 1964, the UK budgetary grant of £5m to Malawi represented one-third of total recurrent expenditure. The grant was down to £2m by 1970 (and 10 per cent of expenditure) and from that time project aid (and particularly CDC loans) became the main instrument of support for the agricultural sector until programme aid was introduced in the early 1980s. These programme aid allocations (see below) have an agricultural focus in that they have been linked, in part, to donor-prescribed economic policy changes (including changes in agricultural pricing and farm input subsidies). But attempts have also been made to target programme aid directly on the agricultural sector, by addressing the position of foreign exchange availability for agricultural importers.

A more enduring form of aid has been technical cooperation, which had risen to over 50 per cent of total UK aid disbursement by the mid-1980s. The position on UK manpower aid to the Malawi public service has changed since the 1960s and early 1970s in that aid-funded Permanent Secretaries and similar postings are now the exception, but UK nationals have a much larger presence than in Kenya and Tanzania, for example. There have been significant reductions in recent years: the number of TCOs and supplemented posts in Agriculture and Natural Resources stood at 80 in 1975, rose to 91 in 1980, and fell to 31 in 1985.

The pattern of project aid has been much influenced by manpower aid. Apart from major CDC investments (described below) and an unsuccessful attempt to establish a pulpwood industry at Viphya based on softwood forests planted in the 1950s, the UK agricultural aid portfolio in the 1970s consisted of relatively smallscale interventions. In agricultural research, a number of research teams were established - in grain legumes, cotton and pastures for example - following the decision to end budgetary aid to the Agricultural Research Council and substitute project aid.

Research apart, the main thrust of the agricultural aid programme in the 1970s was a series of attempts instigated by TCOs or supplemented staff either to establish new activities in a specific part of the country or to support particular specialist services within the national system. Examples of the former activities are the Mzuzu poultry scheme, smallholder irrigated settlement in Hara and the Integrated Livestock Project which established marketing infrastructure as well as artificial insemination and other technical services in selected districts. Examples of the national specialist services approach are the Dipping and vaccination programme (which received a favourable evaluation report in 1983 in terms of reduction in cattle mortality rates) and the Seed Technology Unit.

The only surviving ODA-supported project among this varied portfolio has been the animal disease work which is now largely involved in rinderpest control. The decline of small projects set in around 1980. Few were evaluated in any formal sense but the issue was not whether the projects were individually successful or not. Rather it was felt (within the Government and among influential donors such as the World

Bank) that small donor-assisted projects were difficult to replicate and did not fit any national strategy to build capacity to assist large numbers of smallholders. For ODA there were also the factors of declining TCO influence and of a declining aid programme and, more broadly, the value being attached to donor co-ordination and co-financing arrangements. The upshot was ODA support for the NRDP, the major component of which was the Phalombe Rural Development Project (see below) which involved increased expenditure on extension, credit and rural roads.

UK aid for Malawi's research programmes has declined substantially since the early 1970s. The number of British personnel working in established agricultural research posts was around twenty from independence through to the early 1970s. In 1981 there were only two OSAS posts, including Chief Agricultural Research Officer: today there are none. In addition, by 1981, ODA project aid for agricultural research had been reduced to three projects, all in export crop research; tea, biochemistry, tobacco (see below) and pest control in macadamia nut cultivation. Support for tobacco research, and for cotton research, was sustained over a long period and this continuity has been an important ingredient in the establishment of local institutional capability. Support for maize research has been less successful (see below) and was relatively short-term.

CDC's agricultural investment in Malawi is larger and more diversified than in either Kenya or Tanzania. Its main role in agricultural development has been as the leading agency in promoting tea, sugar, coffee and flue-cured tobacco among smallholders. Particularly in tea and tobacco there has been a widespread uptake by smallholders but the CDC schemes have not obtained the expected results in terms of farmer incomes, number of producers or commercial viability of the Authority concerned; and the lessons of CDC in Malawi (see below) point particularly to the difficulty of covering the costs of managing tenancy-based schemes.

CDC's involvement in large estate sector agriculture has also been significant. Since 1980 the Corporation has invested in three new estate projects: Vizara Estates Rubber, Karuzi Tea Company and the Kawalazi Estate (tea, macadamia and coffee). In addition, since 1977 CDC has provided three loans to the Government of Malawi to subscribe

shares in the Dwangwa Sugar Corporation (DSC) which manages a 5,200ha irrigated estate in the Central Region, of which 660ha is under lease to around 300 smallholders under the Smallholder Sugar Authority (SSA).

The SSA's Dwangwa Smallholder Sugar Project is a modest outcome, in terms of irrigated smallholder development, when set against the original objectives for the Dwangwa Delta. In 1969 ODA established a pilot rice scheme and the subsequent British Irrigated Rice Project (BIRP) produced a proposal for 4,300 smallholder settlers. However, in 1973, the Government decided to expand national sugar production, and the DSC was established.

Investment in sugar in the Dwangwa Delta (and the overall investment includes the construction of a road north of Nkhotakota under ODA project aid) has proved unsatisfactory to date. Projected land development costs soared in the period 1977-81 partly due to the need to re-develop land and build flood protection works following an unanticipated rise in the level of Lake Malawi. But of more long-term importance was the downturn in the world sugar price in the 1980s and sluggish domestic demand. For SSA producers, the ex-mill prices were some 20-30% below CDC appraisal report projections from 1982 onwards. The government has provided price support (and ODA an effective subsidy as the costs of the expatriate CDC manager are met from aid funds); but there have been over 70 resignations and evictions from the scheme and the commercial viability of SSA is uncertain.

The record of SSA is repeated, in broad terms, in all four of the smallholder crop authority projects in which CDC has been involved as both financier and manager. The Kasungu Flue-Cured Tobacco Authority (KFCTA) (see below) illustrates the problems for commercial management in circumstances where smallholder production is subject to large price fluctuations. Yet the first of the CDC smallholder projects, Smallholder Tea Authority (STA), which began in 1967, also shows positive price responsiveness with significant yield improvements from 1983/84 (following world price increases) after several years in which poor husbandry and plucking standards caused some despair among managers. The current poor performance of the Smallholder Coffee Authority (SCA)⁶ also reflects the difficult and long-term nature of establishing a significant base for a smallholder export crop industry

in a particular region. As in the SSA, ODA finance has been provided to cover part of the management costs, but the necessity of government subventions on the operating costs of the Authorities runs counter to the CDC objectives of establishing self-financing enterprises.

Phalombe Rural Development Project

The Phalombe RDP was the largest component of ODA's support for the NRDP: the two other components were assistance to the B'antyre Agricultural Development Division (in which Phalombe is located) and to the National Sample Survey of Agriculture. World Bank technical assistance was important to the evolution of NRDP but the commitment of ODA was seen by the Government in 1977 as critical to the arrangement of co-ordinated donor support for a £40m programme requiring £35m in external finance over five years. In the 1977 UK/Malawi aid talks £4.8m was earmarked to NRDP and eventually ODA was the third largest (and largest bilateral) donor.

The NRDP strategy to which ODA subscribed was regarded as an extension of the LLDP approach. A long-term commitment was envisaged with a 20-year timescale for developing infrastructure and support services and for expanding these from the initial selected area. The term used to describe provision was 'extensive' rather than 'intensive' with LLDP generally seen as too high cost and over-managed for long-term replication.

But in fact the NRDP strategy was substantially different from the earlier land development projects. In Lilongwe, for example, a major constraint to increased production was seen as the scattered and insecure nature of land holdings and the low level of land husbandry. The project emphasised re-settlement, land registration and consolidation, soil conservation and, in places, irrigation measures. NRDP, on the other hand, identified more manageable and short-term constraints as its priorities. These were input supply (particularly improved seed and fertiliser), credit, extension and - in support of these - rural feeder roads, stores and staff housing. Thus Phalombe RDP was essentially an agricultural services project with a 'poverty focus' on the smallholder sector primarily cultivating mixed stands of food crops with occasionally some land down to crops such as cotton or tobacco.

The decision to support aid to NRDP was taken with confident assumptions about rates of uptake of trials-based recommendations across a

range of crops. Farm input costs were expected to rise substantially (thereby necessitating new credit facilities) with a doubled output value for around 20% of farmers. The NRDP (and thus the Phalombe project) strategy assumed the availability of improved technologies attractive to smallholders.

In cost terms, the Phalombe RDP was largely an extension project. The number of extension workers was doubled and provision made for staff housing and training centres. The project also covered the costs of supporting the increased extension effort: administration, fuel and vehicles, rents, etc. A large part of the extension effort consisted of credit administration, but ODA support for loans was limited to little over £200,000 made available to ADMARC on the understanding that the equivalent value would be expended on UK procurement of agro-chemicals and fertiliser. Other major items of expenditure were feeder road improvement and storage depots.

The project was designed to be incorporated into the Government system. The annual project budget, covered 90% by ODA, was agreed each year with the Development Division in Lilongwe. ODA was concerned at the outset at the recurrent cost implications of Phalombe and resisted government requests to increase provision for more posts and mileage allowances. However, the calculated internal rate of return of 12% assuaged some of ODA's concerns on the financing of extension expenditures. On the level of contribution to local capital and recurrent costs, ODA agreed that special circumstances allowed a liberalisation of guidelines on UK procurement and over 50% of the Phalombe allocation was for local costs. On local recurrent costs, it was accepted that project posts and related allowances need not be placed on the government revenue account until the end of the financing period.

In the event, the major issue for an extension of support to the project (into a new phase and an expanded area) was the high recurrent cost and management implications for the Ministry of Agriculture. The initial Government of Malawi request involved almost 400 new posts, 300 staff house units and 90 vehicles which the Development Division could not countenance especially, in their view, given the staff demands of a similar ADP project elsewhere in the District. Yet it was the lack of confidence in the direction and likely outcome of

Phalimbe RDP which raised so sharply the questions about the size of public sector employment against the returns to the services being provided.

As a 1985 evaluation of Phalombe RDP indicates,⁷ it is impossible to form a firm view of the impact of the project on agricultural output. Maize production increased sharply from 1981/82 but this increase appears to be largely attributable to price changes and it occurred in both project and non-project areas of the District. Furthermore, a survey in the fifth year of the project showed that only 2% of the maize area (against an anticipated 8%) was down to the recommended hybrids and composites. On the other hand, the number of registered tobacco growers increased and there was an expansion in sales of insecticides to cotton farmers. There was also a big expansion in uptake of credit, and fertiliser sales increased correspondingly.

However the 1985 evaluation noted that, in general, crop recommendations were unwelcome to farmers. Extension agents also reported that, in mixed stands, improved varieties were insufficiently outperforming local to justify the attendant risks, including lodging and pest damage. The major single weakness in agricultural support in the Phalombe area thus appears to be in research, where trials work did not begin until 1985 and was confined to screening cowpea and pigeon-pea varieties. ODA had little technical involvement in Phalombe. It is evident that the lack of economically-sound technical messages has held up agricultural improvement; the intention to frame recommendations for different 'extension planning areas', for example, has meant little in practice and a centrally-determined package remains the dominant pattern.

Programme Grants, 1980-85

The introduction of programme aid to Malawi in the 1980s occurred when the first of three World Bank Structural Adjustment Loans was under negotiation and when an IMF stand-by programme, later to be supplemented by a three-year IMF Extended Fund Facility, had already been agreed. Programme aid was thus first supplied at a time of unusually severe balance of payments difficulties for Malawi. The first programme aid agreement of 1980 (for £6m) was explicitly to help relieve a perceived foreign exchange constraint by supporting the flow

of imports to sustain existing productive capacity particularly in the agricultural sector. The second agreement of 1984 (for £2.5m) was made, less explicitly, 'in support of measures undertaken by the IMF and the IBRD'.

Under the first grant agricultural inputs (particularly requests for fertilizers and machinery) were favoured by OLA and the main beneficiaries proved to be government departments and parastatals. Even so, the end-disbursement date for this new stream of 'fast-spending programme aid' had to be extended from end-September 1982 to end-September 1984. The take-up of the second programme grant of 1984 was even less rapid despite initial applications totalling £4m for a grant covering imports of £2.5m.

Many of the initial applications for funds were subsequently withdrawn, including requests for agricultural equipment, and several large importing firms did not apply to the Reserve Bank for a tranche of UK programme aid as they feared this would disrupt their normal access to foreign exchange under existing arrangements. This indicates that the foreign exchange shortage was no longer severe in the 1984-85 period and an internal ODA appraisal of the second programme grant expressed doubt that programme aid was relieving a critical foreign exchange position.

Conditions for the use of the second programme grant were much tighter than the first. The UK government this time insisted that procurement should come from the private sector rather than government and parastatals, and should be in the form of raw materials, spares and replacement equipment. Yet unlike the first grant, there was no prescription of a particular agricultural input share, and in the event only £1m of the £2.5m available was related to agricultural end use. This amount was largely made up of sales to three firms: Shell Chemicals (Malawi), Farming and Engineering Services, and Agricultural and Auto Spares.

The introduction of the 'private sector procurement' condition into the second programme grant ignored the reality of the Malawi economy, much of which is only nominally in private hands. Furthermore, if one of the objectives of UK programme aid had been to assist Malawian smallholders with a regular supply of imported inputs, this would have

necessarily involved procurement by government agencies, so the restriction of procurement to private firms tended to reduce the flow of direct benefits to the smallholder sub-sector. In practice, however, a large order for Shell's Ripcord pesticide represented the total annual requirement of the Malawi market for the product, indicating that much would be supplied not to the private sector, but to parastatals.

Experience with five years of programme aid in Malawi has proved that it can be faster disbursing than conventional project aid, but it was less fast-spending than had originally been anticipated and there was regularly pressure to elicit suitable requests for allocations in the three months before the close of each financial year in order to avoid under-spending. Furthermore, as foreign exchange was not in short supply after the first two years of programme grant applications, programme aid also had only limited effect in filling a foreign exchange gap and directing imports into priority sectors in the spirit of the structural adjustment programmes.

It is also evident that programme aid had less direct impact on agriculture than anticipated. Agricultural suppliers and producers had priority access to foreign exchange under existing Malawi Government guidelines, and many of the larger firms serving the estates had no difficulty in procuring imports through the normal channels. The stricter requirement to direct allocations to the private sector under the second grant had the effect of extending access to foreign exchange to small firms, in transport and manufacturing, rather than smallholder agriculture.

Crop Research: Cotton, Tobacco and Maize

UK technical assistance has played a major role in the development of both cotton and tobacco in Malawi particularly in resistance breeding and the development of cotton pest management practices. Under the Colonial Development and Welfare Fund (CDWF) a cotton pest research programme was established in Malawi in 1956 and specifically to work on two major pests, red bollworm and stainer bug. In a successful period of work, the biology of the main pests was determined and recommendations developed for the control of the cotton pest complex. Together with the release in 1961 of Albar 637, which had a

high degree of resistance to bacterial blight, the growing use of recommended insecticides provided the basis for a rapid expansion of the cotton crop in Malawi and elsewhere in the Federation.

After independence, cotton pest management research was continued by the Agricultural Research Council (which received support through UK budgetary aid); and when this form of aid was ended, support for research in cotton breeding, agronomy and pest management became available from ODA's Research and Development funds. For example, support has been provided by TDRI in the design of traps to monitor bollworm populations; and in breeding, selection work has continued to improve Albar 637 and another improved variety, Makoka 72, released in 1972. This work was undertaken by staff of the Cotton Research Corporation (CRC) which came to an end in 1975 when contributions from member countries and ODA itself could no longer match operating costs. However, UK aid support has helped to develop a significant Malawian research capability to replace the earlier CRC work.

In 1986, the Ministry of Agriculture had a five-person research team, based at Makoka, four with post-graduate degrees from the UK. The strength of the team has been demonstrated by its shift in emphasis towards the development of varieties suited to specific areas. In 1985 a new variety was released for the Shire Valley, with a significant lint yield superiority over Makoka 72, and a further variety has been developed for estate production with a high ginning percentage.

The establishment of a strong technical base for cotton production in Malawi has resulted from the long period of UK support and from the continued commitment of Government to provide an infrastructure for research. Unlike in Tanzania, the end of CRC support did not lead to a run-down of cotton research as Malawi staff had received experience from working with the CRC and were provided with specialist training in the UK.

A similar record of effective aid is evident in the tobacco industry. Of the crop research projects set up in Malawi when budgetary aid was brought to an end, tobacco research has been the longest. Support was provided from Research and Development funds from 1971 to 1977 when the project was extended as part of the bilateral aid programme. The project was then transferred from the Ministry of Agriculture to the newly established Malawi Tobacco Research Authority in 1980.

During the first three years of the project it was found that the standard of management of the fire-cured crop was the major factor affecting quality. The yield and quality characteristics could be influenced by manipulating fertilizer and spacing treatments so that greater returns could accrue to the small-scale grower without increased inputs. In the breeding programme, attention was paid to the diseases brownspot and wildfire which were serious constraints to Burley production. The problem was largely solved by the release in 1976 of Banket A-1, with cultural recommendations established by agronomic trials enabling more efficient growers to double their yields.

The main thrust of the breeding programme on fire-cured tobacco for smallholder production has been the development of a disease-resistant variety. A cross-breeding and back crossing programme was started under the project which led to the release of DRV (Disease Resistant Variety) 7. The variety resembles the old in growth habit and carries resistance to brownspot, wildfire and mosaic virus. By 1985-86 the whole of the fire-cured tobacco area has been planted to the new variety.

The UK project was brought to an end in 1985. It had been sufficiently long to achieve its objectives and the control exercised over the issue of seed enabled the breeding work to make a rapid impact as soon as new disease-resistant varieties were available. Today the Malawi Tobacco Research Authority is relatively well staffed with national scientists and the system of financing, by a levy on the crop sold, has meant that there are good facilities for work. As in the case of cotton research, UK long-term support has contributed to a strong institutional base. In maize research, however, a different picture emerges.

Maize is the staple food and major crop of Malawi in terms of planted area and volume, and from the early 1970s UK technical assistance was provided to improve yields and develop new maize varieties. In particular, the five-year project aimed to develop higher yielding varieties of white-seeded maize and to establish fertilizer requirements.

During the first two seasons of the project, 30 varieties were tested at about 100 sites. The existing hybrid SR52 gave much the best

yields but SR52 (and its successors) are dent types not favoured for food use as - compared to flint types - they are difficult to pound, susceptible to weevil damage, and store poorly under high moisture conditions. The project was remodelled to emphasise composites. Two of these, Tanzanian Ukiriguru Composite A (UCA) and Malawian Chitedze Composite A (CCA), were identified as giving improved yields at medium to high altitudes, and lower altitudes, respectively. Both are flint types and a programme of recurrent selection was commenced to improve their yield and agronomic characteristics. They remain the only two maize varieties recommended for domestically-consumed crops, and there has been little progress in maize breeding since the mid 1970s when the ODA project ended.

In retrospect, the period of the ODA project was too short: it provided no formal training and its closure in 1976 left a major gap in the national maize research work.

Seed Development

The effects of this lack of sustained UK aid support for maize breeding and agronomy became evident as a new seed industry was built up with maize improvement as a main component. In developing the seed industry there were two phases of UK support: first, the establishment - from 1976 - of a Seed Technology Unit under the Director of Agricultural Research; and second the creation - in 1978 - of the National Seed Company of Malawi under ADMARC and CDC ownership. The forms of aid were technical assistance and capital aid for the Seed Technology Services project and CDC loans and ODA-supported management consultancy for the NSC(M).

UK aid concentrated initially on a technical service responsible for maintaining parent lines, field certification, and seed testing. Capital aid was given for a laboratory and buildings of a Seed Technology Unit (STU); recurrent cost support was also provided; and technical assistance took the form of a Chief Technical Officer (CTO) to establish the STU. ODA took the view in 1975 that commitments should be limited to three years on the grounds that problems already existed of 'extricating ourselves from open-ended projects'. The Government of Malawi was expected to take the STU onto its recurrent budget by 1978. In fact, by late 1977 - when the CTO's contract was

due to expire - equipment was still arriving and the building work had not been completed. One item of delay had been the order for a Swiss-manufactured humidifier which had been held up for five months while permission for a Department of Trade and Industry (DTI) waiver was sought.

A request to extend the contract of the CTO was agreed by ODA but in the meantime a CDC mission had reported on the proposition of a National Seed Company and the Corporation was looking to ODA to provide the services, under consultancy terms, of the same CTO as General Manager. On leaving the STU in 1978, the CTO stressed the need for an experienced expatriate replacement and saw a major problem of technical direction for the fledgling Unit. In the event, ODA was unable to provide a suitably qualified replacement and did not feel compelled to press the matter as the 'present financial position' in respect of Malawi had become constrained. In 1983, the Agricultural Adviser found that the STU still lacked a trained seed analyst and suggested that an ODA-supplemented appointment should be considered. The matter was not followed up and no request materialised.

A much more substantial UK investment was involved in the establishment in 1978 of the National Seed Company of Malawi (NSCM) which owns a 450ha seed farm, processing plant, warehouse, head offices and cold stores. In addition to loan finance, CDC provided, to 1986, the core management of NSCM with four posts - General Manager, Company Secretary, Seed Production Manager, and Seed Processing Manager.

The Company has greatly reduced Malawi's dependence on imported seed and now exports small amounts of maize, vegetables and rhodes grass seed. Although it has yet to achieve the shareholders' agreement target of a 15% return on invested capital, NSCM has made small operating surpluses in each year since its establishment. The Company is well-managed, the contract grower system is working efficiently, and - below senior management level - there has been a satisfactory development of local staff capacity.

NSCM represents a successful UK aid intervention. Yet seed development for smallholder production in Malawi remains at a disappointingly low level. In particular, the levels of sales of seed maize, by far the single largest commodity in which the Company deals, have grown very little since the Company became fully operational in late 1979.8

One factor frequently mentioned within the company concerns the demand collection and distribution capabilities of ADMARC. But the low margins in seed trading that the Government imposes on ADMARC inhibits the holding of large stocks at its local sales point; and CDC has been unable to influence government policy in this area. Of more long-term importance has been the failure of the Research Department and (to a lesser extent) the STU, to develop a range of varieties suited to the economies and consumption patterns of Malawi's smallholder sector. As the CDC visiting adviser noted in 1983, there is inadequate service to NSCM in new inputs of breeder seed and this in turn reflects shortage of qualified staff, poor maintenance of research equipment and general lack of research funding especially for maize breeding and agronomy research. While it is evident that the current level of efficiency of the Malawi seed industry owes much to UK aid in various forms, it is also the case that the industry could have become more effective with a more sustained UK aid effort in laying the foundations for the seed industry, particularly in its main commodity, maize.

Kasungu Flue-Cured Tobacco Authority

In its initial feasibility study of the smallholder tobacco production in Kasungu, CDC emphasised that "smallholders should be at least self-supporting in food crops" and that CDC should "provide sufficient help and supervision at the start; but aim to progressively withdraw it so that the African farmer, individually or as a group, becomes more self-reliant".

CDC has now provided six loans (at a total value of £4.16m) to the Authority (KFCTA) since its establishment in 1970, and it has also provided management under contract. For much of the 1970s and early 1980s there were four CDC staff members in senior positions in the Authority (General Manager, Workshop Manager, Production Manager and Financial Controller). In 1986 there were still two senior posts filled by CDC: Financial Controller and Production Manager.

In 1986 there were over 900 Malawian farmers benefiting from the opportunity to grow flue-cured tobacco, a crop previously dominated by large commercial growers; and by 1985/86, 1,226ha had been brought under production by the Authority, producing 2,114m kg of tobacco, approximately 8.5% of national production, with a further 1,078ha

under maize. KFCTA carries out a wide range of services on behalf of 'smallholders' (1ha) and 'growers' (4ha) including the procurement and delivery of fertiliser and chemicals, the provision of extension services, the maintenance of the road, electricity and water services and the organisation of tobacco grading and its transport and presentation on the auction floors. The costs of such services are recovered - in theory - from tobacco sales handled by the Authority.

The tobacco schemes have had some notable successes. Yields have continued to rise steadily (from 1.19 tonnes/ha average in 1971 to 1.92 tonnes/ha in 1985) and both yield and selling price has been consistently higher than the national average. But against this there has been a contraction in the number of settled farmers (from a peak of 1,247 in 1980 down to 754 in 1984 and rising again to 930 in 1986), and also in the cropped tobacco area (down from 2,011ha in 1978 to 1,226ha in 1986). Furthermore, returns to tobacco growing have weakened and farmer incomes have proved a disincentive to continued production in many cases. Up to 1977, the costs of production of flue-cured tobacco were relatively low in relation to tobacco prices. However, after 1977 crop costs started to rise and tobacco prices went through a period of marked deterioration. From 1978 to 1981 the majority of farmers were unable to generate sufficient revenue from tobacco to pay KFCTA for the cost of services, and to retain an adequate income. Although from 1982 onwards the majority of remaining farmers have made a profit, this disguises the fact that substantial numbers of farmers have continued to operate unprofitably and have either left the project or reduced their input into tobacco cultivation.

These difficulties for farmers have had a serious impact on the financial viability of the Authority. All of KFCTA's permanent capital has been provided through redeemable loans, mainly from the CDC. Repayment was intended mainly from farmers' accumulation of a 'capital stake', whereby individual farmers were required to contribute 40% of their profits. In practice, most farmers were unable to pay, and the stake system was replaced by a rental system in 1981, whereby farmers pay a rent designed to cover interest on development loans. There is at present no charge contributing to repayment of principal, which KFCTA is thus unable to meet. Similarly the Authority has been unable to cover the recurrent costs of its operations in every year but one

since 1975, and the costs themselves have risen sharply because of vacant lands, farmers' losses and the rising expense of maintaining welfare and technical services.

In 1981, the Government introduced a subvention payment to KFCTA and discontinued the carryover of farmers' debts. These measures, together with an increase in tobacco prices in recent years, have improved farmer incomes. The use of input packages has increased and the the high yields necessary to the continuation of the project are now being achieved, but only at the cost of effective government subsidy.

The case of KFCTA illustrates the general benefits that can accrue from such a scheme, but also the problems which may arise, especially in years of poor commodity prices, and which have limited their potential for further expansion. As in more successful KTDA project in Kenya, this shows the need for smallholders to achieve high yields to cover the relatively high costs of smallholder schemes, and the close correlation between farmer incentives, production performance and the financial viability of the scheme itself.

It is evident from the KFCTA experience that the careful design of smallholder projects undertaken by CDC does not invariably produce the sort of successful enterprise exemplified by the KTDA in Kenya even where direct CDC management is provided over a long period. With farmers still dependent upon KFCTA to service their tobacco crop, and KFCTA itself still dependent on regular government subventions, the initial objectives of farmer self-reliance and scheme financial viability have not been realised and the spread of wealth from tobacco production is narrower than originally anticipated.

AGRICULTURAL AID TO TANZANIA

The Colonial Legacy

Tanzania inherited a potentially strong agricultural sector from the colonial period. Research and services for sisal, cotton and coffee production were well-established, although research on food staples had not made the same progress. Partly because there was less

pressure from European settlers in Tanzania than in either Malawi or Kenya, there was earlier government support for smallholder production which involved considerable intervention in the sector including encouragement for co-operative processing and marketing arrangements.

The marketing of crops grown by Africans was initially undertaken by Asian traders, but as early as the 1920s African coffee producers organised to break the Asian monopoly and established the Kilimanjaro Native Planter's Association (KNPA, later the KNCU), the first such organisation in East Africa. With the encouragement of the Colonial Office the co-operative movement as a whole underwent substantial expansion in the 1940s and 1950s and some of the co-operatives were among the largest commercial enterprises under African control in the entire continent.

After 1945, a strongly interventionist policy towards African agriculture developed. Apart from schemes for largescale mechanised groundnut cultivation to serve the needs of the British edible oils market (a cause celebre of its time), there were also major resettlement schemes, such as Sukumaland, based on the expansion of its cotton production; and - against nationalist opposition - an increased priority was given to enforcing soil conservation and livestock control regulations.

In terms of agricultural services the most important legacy of the colonial period was the building of an agricultural research system. The East African Agricultural Research Station was established at Amani in 1921; the Cotton Research Corporation assisted the establishment of cotton research stations; and a veterinary laboratory and livestock research station was also established on the site of a former German rinderpest serum institute at Mpwapwa.

The colonial research effort particularly benefitted coffee, cotton and sisal and selection work on sorghum was initiated. A maize breeding programme, started by the Tanganyika Agricultural Corporation in collaboration with EAAFRRO, had notable success in the 1950s with the development of locally adapted varieties resistant to Puccinia polysora rust, which first appeared in East Africa about 1952.

Despite this progress in food staples the main feature of colonially administered agriculture was the considerable export base which had

been developed and which was primarily in the hands of African smallholders. Tanganyika was thus regarded by the colonial agricultural service as having a greater farm potential than Kenya. Furthermore, unlike Kenya and (to a lesser extent) Malawi, independent Tanzania did not inherit a farm sector in which European settlement had competed significantly with African land needs. But of particular significance was the legacy of active intervention by the Government in all areas of farming, including cultivation practices, resettlement, marketing and price control. This laid the basis for the further extension of public regulation after independence when radical policies to transform traditional agriculture were introduced.

Trends in Agricultural Aid

Since independence, bilateral relations between the UK and Tanzania have been frequently strained and the UK aid programme has also developed an erratic profile⁹ with periods of aid suspension. In agriculture, the UK has not had the long-term involvement in the sector that has characterised aid to Malawi and Kenya, although two exceptions to this - cotton research and dairy development - are described below. One consequence of this relative lack of involvement has been the extent to which ODA agricultural aid decisions have been instigated by Government requests for project finance in line with development policies already determined with other donors. For example, ODA has given support both to Tanzania's decentralised integrated rural development initiatives and to its grain reserve strategy. In Mtwara and Lindi Regions, ODA became the lead external aid agency, and in Tabora, ODA was responsible for a land use component of a project where the World Bank took the lead. ODA support for strategic grain reserves - the building of large regional depots - was also a main item in UK agricultural project aid from the late 1970s, although it became evident in the 1980s that low levels of maize output, and a shift of policy emphasis towards village-level storage, had diminished the utility of the depots for grain storage.

In the case of support for RIDEPS, ODA was influenced in its assessment by the 1975 White Paper which stressed the need for both an 'integrated and decentralised approach to agricultural development'. Within the Tabora RIDEP (TRIDEP), ODA financed (between 1978 and 1984) a land resource survey which identified in some detail the nature of

Kenya or Malawi. The total financial commitment in Tanzania in the period 1970-84 is £27m, well below both Malawi (£59m) and Kenya (£78m) and of the £27m only £5m has been in the agricultural sector - primarily on two investments: TANWAT and TANSEED (see below). The main CDC agricultural interest has been in a plantation company - TANWAT - established in the 1940s to produce tanning extract from wattle. In the 1960s, CDC (faced by a declining world demand for wattle), also began production of beef, wheat, timber and seed maize. It has been CDC policy world-wide to divest ownership of established companies such as TANWAT but the Government has been unwilling to assume responsibility for what has become a diverse enterprise.

The Tanzanian approach to socialism meant a degree of hostility to individual farmers involved in relatively high value export crop production and the CDC smallholder authority model was not adopted. However, the deteriorating performance of crops such as sisal, tea and coffee led the Government to reconsider its attitude to the management of the agricultural export sector in the 1980s. In 1985, CDC agreed to finance and rehabilitate a number of estates and a factory and the Corporation was also encouraged to prepare proposals for financing and managing a rehabilitated coffee sector.

Programme Aid

The main current instrument of UK support for the agricultural sector in Tanzania is via programme aid which is intended as a prelude to more direct agricultural assistance. The UK's position is that government policy changes encouraging private enterprise, switching resources from social services into production, and managing the exchange rate at a level which makes exporting attractive to agricultural producers, constitute the conditions for a new period of UK aid project funding. In early 1987, an offer of an additional £25m aid grant over a three year period was made of which £12m was earmarked from development projects with priority given to the agricultural sector.

This marked a significant shift in aid policy towards Tanzania following a period in the early 1980s in which few efforts were taken to instigate UK aid initiatives. The aid stand-off on the UK side was partly influenced by poor diplomatic relations following earlier

disagreements over UK intentions in Zimbabwe and its policies to bring about change in South Africa; but there was also ODA disapproval of government economic policies which extended to reservations on the forced nature of villagisation and to exasperation at Tanzania's refusal to abandon state controls, notably in the agricultural sector.

Tanzania established its own domestic structural adjustment programme in 1982 and in 1984 conceded large increases in producer prices for both food and export crops. But while the Government refused to accept IMF recommended economic policy changes, the UK - with others - refused to provide programme aid or to initiate new capital projects. This was altogether a much more robust use of programme aid in support of policy reform than in either Kenya or Malawi. The issue eventually hinged on a matter as specific as the size of the agreed Tanzanian devaluation and it was after an IMF agreement was signed, in 1986, that the UK allocated the first £10m tranche of programme grant to support 'essential imports'.

Of the allocation, £3.75m was directly for the agricultural sector - agricultural chemicals, veterinary drugs and small diesel engine spares - and the remainder for road and rail transport. Given the benefits to agriculture of improving marketing efficiency and the supply of agricultural inputs by road and rail, most of the programme aid allocation can be deemed to be directed towards supporting the agricultural sector.

TANSEED

The Tanzanian Seed Co. Ltd (TANSEED) was established in 1972 as a joint venture between CDC and NAFCO to expand the production and supply of certified seed, particularly maize and sorghum. At that time the cereals seed industry primarily consisted of a breeding station at Ilonga with a number of regional multiplication stations under the Ministry of Agriculture, distributing certified seed mainly to its Regional Offices, and to the Tanganyika Farmers Association. However, in the early 1970s USAID decided to support the establishment of Foundation Seed Farms (replacing the poorly functioning regional stations) and, effectively, made the creation of TANSEED a condition of this support. Simultaneously, the Government enacted seed legislation under which the Ministry established a seed certification

agency, TOSCA (Tanzanian Official Seed Certification Agency).

The position in the early 1970s, therefore, was that some new cultivars had been developed such as the composite UCA; the Foundation Seed Farms (with other contract growers) were taking this breeders' seed and multiplying for TANSEED to process, certify and market. The system was similar to the one already described in Malawi. CDC's role was also similar to its role in NSC(M) although in Tanzania there was a stronger base of expertise and involvement in seed production, particularly at TANWAT which was producing seed maize and wheat.

CDC was involved in TANSEED itself from the outset, originally holding a 50% share and providing a General Manager, a Company Secretary and a Seed Production Manager under a managing agency contract. The General Manager post was localised after four years although CDC still provides the Company Secretary and the post of Seed Production Manager was also held by a CDC appointee until 1986 under World Bank financing.

The company established four processing plants - at Arusha, Iringa, Morogoro and Njombe - with a total production capacity of 9,000 tonnes pa. Four years after its establishment, TANSEED sales were 5,224 tonnes (1976/77) but the annual sales figure then fell back to a low of 3,922 tonnes in 1982/83 and although there was a recovery, the figures for 1983/84 and 1984/85 were only a little over 5,000 tonnes. This amounts to over 1.5 million hectares under improved varieties provided by TANSEED (or under common seed varieties cleaned and dressed by TANSEED) but it is substantially below the 30,000 tonnes which the Tanzania Food Strategy report anticipates as annual demand by the mid 1990s.

Nonetheless, until 1982/83 TANSEED appeared to be trading successfully, when there was a sharp deterioration as sales dropped. However, a CDC mission found that earlier profits were largely of a book nature and there had been the failure to make provision in the accounts for losses on seed stocks which were no longer saleable. Subsequently the deterioration in TANSEED finances continued with increasing debts, and difficulties in meeting payments to contract growers, and service equipment. Seed processing and packaging in particular has suffered from machinery failure, although both Dutch and Canadian aid is now being provided to rectify this.

The question is how far this apparent failure of the seed industry can be attributed to a range of wider factors affecting the agricultural economy (suppressing both the demand for seed and the efficiency of its supply), or how far the failings can be attributed to the industry itself and the way it has been managed and supported - or not supported - with external assistance.

The main UK support to the industry has been in TANSEED itself, but the problem of TANSEED cannot be divorced from other difficulties in the industry, particularly in seed production, quality control and retailing. In particular, during the ten years of USAID support for the Foundation Seed Farms. The mechanised largescale units were run inefficiently and when the project ended a large proportion of the equipment (of US origin) was in need for a refurbishment which could not be afforded by the Ministry. It was felt that the scale and cost of the Foundation Seed Farm operation (when set against its seed output) could not be sustained without external grant support; and TANSEED was approached (unsuccessfully) with a view to the company taking direct control.

TANSEED, meanwhile, was having difficulty with its own contract growers who were unattracted to the prices paid by the company, especially compared to prices the same grain could attract on the parallel market, and who were confronted by late and irregular payments. But it is in the retail side of the seed industry that the most serious problems have occurred. Although a CDC Review Mission found that the overall quality of TANSEED seed was 'not especially bad', there was a widespread perception among farmers that seed originating from TANSEED is of poor quality with unreliable germination. This quality problem was largely attributable to deficiencies in stock control and management under the Regional Agricultural Development Officers (who are the main outlet for TANSEED with the declining national role of the Tanganyika Farmers Association). According to the CDC mission, seed was often poorly stored, held over without retesting and occasionally incorrectly labelled.

Such shortcomings in management are compounded by the difficulty of operating a seed industry in Tanzania. TANSEED unlike NSC(M), has four factories to manage and its seed producers are often far from the processing facilities; there are major distribution difficulties in a

country as large as Tanzania with deteriorating transport systems; and unlike the hot, dry post-harvest period enjoyed by Malawi, Tanzania is generally humid in the post-harvest period and storage is correspondingly more difficult.

The poor trading performance and weak management of TANSEED led CDC to conclude that without a substantial injection of new capital the company cannot become financially viable. But this injection has been difficult to justify while other components of the seed industry are underperforming and thereby suppressing any significant increase in demand. As in the Malawi case (which is a more successful UK-aided industry) it is evident that CDC has a potentially major role to play in the establishment of a structure for publicly-controlled yet commercially viable seed industry. Yet the effectiveness of CDC depends largely upon the successful establishment of other institutions requiring a much longer period of external grant support allied to government commitment to measures to enhance complementary activities from plant breeding through to farm input supply services and extension.

Home-based Scientific Support: Armyworm Control

UK support for African armyworm research and development in Tanzania (and Kenya and Uganda in fact) is an example of aid funds being used to support (home-based) scientific expertise: in this case the TDRI. Like the desert locust, armyworm is a migrating pest, and its control requires regional co-operation. Thus EAAFRO was the initial focus, in 1961, of UK involvement and ODA's former Anti-Locust Research Centre participated in an Armyworm Research Project from 1966 to 1971 which established an embryo forecasting service in East Africa designed to warn farmers when they could expect infestations.

In continuing work at TDRI in the UK the components of the female sex pheromone of the armyworm moth were identified in the 1970s and a synthetic pheromone was shown to be an effective attractant in traps. Large numbers of pheromone dispensers have subsequently been provided by TDRI for an extensive trap network in East Africa, which, together with data on wind systems, enables the forecasting of primary outbreaks in recognised areas at particular times of the year. The rate and direction of subsequent dispersion to form secondary and tertiary epidemics can now also be predicted.

In controlling army worm, work began in 1977 led by TDRI scientists on a new programme of ground and aerial spraying involving several countries, including Tanzania. In addition to four TDRI staff members located at the Desert Locust Control Organisation headquarters in Nairobi, there is also an ODA-supported programme of armyworm control in Tanzania with two TCOs attached to the Plant and Crop Protection Services Department of the Ministry of Agriculture in Tanzania.

Training of national personnel at all levels is a component of the control programme and in this area of work the capabilities of TDRI are particularly evident. The training unit of TDRI organises, at the Regional and District level, courses for trap operators in the biology, detection, reporting and control of armyworm. Extension aids have also been prepared and include an African armyworm training package for the Ministry of Agriculture.

Mtwara-Lindi RIDEPS

The Mtwara-Lindi UK aid programme consisted primarily of an attempt at supporting regionally-based planning and implementation; and the main impetus to external aid to RIDEPS generally was decentralisation policy and regional equity considerations (which led to the establishment of Regional Development Directorates) rather than agricultural development per se.

In 1975, a UK aid mission led by the Minister, Judith Hart, agreed to support broadly-based rural development in the remote and poor south-east regions of Mtwara and Lindi. Following up this decision, an identification mission visited the area but could not see any immediately-supportable projects beyond road maintenance, rural water supply, and (drawing upon existing commitments) research and development in oilseeds. This mission suggested the appointment of two TCOs, largely to develop stronger proposals. The Prime Minister's Office (which has responsibility for RIDEPS) did not regard this as a suitable ODA response and emphasised the existing guidelines for donor support for RIDEPS. These different views were reconciled in the 1977 'Reconnaissance Mission' which led to the Regional Development Technical Co-operation Programme.

The natural resources component of the programme included resource survey work undertaken by LRDC and the number of small projects which

were identified and implemented as a result of the UK aid involvement in the regional planning exercise. In this respect, Mtwara-Lindi represents - like EMI in Kenya - an aid 'strategy' for difficult environments. Put simply, this strategy involves placing technical assistance staff to work within decentralised government structures partly in order to strengthen planning and executive capabilities and partly in order to discover any specific aid opportunities that are less than evident at the onset of the programme. In Mtwara-Lindi the initial TC appointments meant an implicit commitment to identify crops and livestock projects and subsequently fisheries staff were also appointed with a similar commitment.

Projects in all sectors were approved within the framework of the regional plan or the annual capital budget for each region. The main capital expenditures were on the Veterinary Investigation Centre (£75,000), rural water supplies, and village stores. By 1980, 25 projects - most under £50,000 - had been approved. Few of these projects involved any ODA contribution to local recurrent costs and the planning programme itself financed only a small number of incremental local posts and allowances. Nonetheless, even this relatively small UK contribution to recurrent costs could not be matched by the Government and often the planned Tanzanian contribution failed to materialise. A number of initiatives such as the poultry feed mill, the hatchery at Mtwara, and the tractor hire unit suffered from the inadequate local provision of staff, fuel and water supply.

The range and scale of small projects instigated was generally unsatisfactory to visiting advisers and TCOs in the regions, who felt that any significant long-term improvement in natural resources was unlikely until the system of government agricultural support overall was improved. This view was accepted by the 1981 Review which stressed the importance of addressing constraints in extension, research and credit and inputs delivery.

In the original project submission 'substantial increases' in marketed output of cassava were envisaged; rice could be 'expanded greatly' and there were 'good' prospects for introducing improved sorghum varieties. The 1981 Review team saw the scope for an extension programme in crops (and livestock) as 'recommendations already exist'. As a result of this confidence, the second major phase of Mtwara-Lindi

was closely linked to decisions on a proposed Extension and Training Programme (ETP). This came to be regarded as the 'core project' of ODA natural resources aid in Mtwara-Lindi and it was recognised that this would involve a relatively high level of support for staff, vehicles and buildings for the Ministry of Agriculture's field operations.

But by 1984 the case for the ETP had collapsed. Reviewing the evidence from LRDC and from the TCO Agronomists on existing practices of land preparations, fertiliser use, seed selection, disease control and agronomic practices, ODA concluded that 'there are no extension packages that would markedly improve farmers' living standards' and the individual practices proposed would be of 'insufficient merit to justify an expansion of the (crop) extension service'.

Rather different issues were raised by the performance of the crop research programme. With ODA assistance, the Naliendele Research Station was given national responsibilities for research on sesame, groundnut and sunflower. Yet it was located in an inaccessible area with difficult working conditions. For example, in the early 1980s the majority of field trial results were lost due to transport difficulties in reaching sites at the appropriate time. In the case of sunflower, it was evident that the crop was performing poorly compared with trial locations at higher altitudes and in due course a new project, supported by ODA, relocated sunflower research at Ilonga.

By 1987 the level of ODA agricultural aid overall in Mtwara/Lindi had been reduced to a few small programmes: a pilot extension services project for goat husbandry, collaboration with several other donors on health services for cattle, a fisheries survey, and trials and demonstration work on rice on a few valley bottom sites. There was no longer any involvement in the 'institution-building' area of regional planning and implementation capacity.

This reduction in the scale of ODA support was deliberate: it had, in effect, moved away from the RIDEF approach to what it termed 'project oriented interventions'. It was not surprising, therefore, that the form and level of ODA support became a bone of contention with the Tanzanian Government. The Government had anticipated ODA support for the RIDEFs which were a centre-piece of the National Five Year

Development Plan. The ETP, in particular, became a major indication of ODA intentions and its subsequent rejection was a source of some acrimony.

Without a substantial aid programme, ODA's contribution to strengthening regional government generally became peripheral although, in practice, this aspect of UK aid had never been a satisfactory component of the Mtwara/Lindi programme. At least one senior officer involved in strengthening local capacity was reported to have had 'negative working relations' with the Tanzanian counterpart; and the process of plan preparation became largely an expatriate exercise. Furthermore, the regional planning units remain weak professionally with frequent transfers of local staff.

At the outset, there was probably insufficient consideration given to the most appropriate form of ODA support, particularly in the natural resources sector. (Unlike EMI, Mtwara-Lindi was not a series of relatively well-prepared and restricted technical interventions reflecting UK expertise (although it eventually became closer to this); and unlike Phalombe it did not represent an endorsement of government agricultural service and input supply initiatives in a specific area.) In the circumstances, it was inevitable that the programme suffered from the different UK and Tanzanian perceptions of ODA's role.

Cotton Research

Cotton growing was introduced into Tanzania in 1904 but attempts to improve the productivity of the crop did not begin until the mid-1930s with selection work on the mixed stock of seed then sown. This led first to the development of 'Mwanza Local', the first cotton variety to be developed in Tanzania, and subsequently to the selection MZ 561, which was released in 1939. In the same year, staff were provided by the CRC to organise cotton research at the Ukiriguru Research Station in the Western Cotton Growing Area (WCGA). This staff support continued to the Corporation's dissolution in 1975, when further UK aid was extended until 1982. The research work done in the period from 1939 to 1974 was responsible for the rapid development of the Tanzanian cotton industry. From 50,000 bales of lint in the late 1950s, production in the WCGA rose to about 190,000 bales in the early 1960s and 390,000 bales in the mid-1970s.

The most serious constraint to production identified in 1939 was the cotton jassid, and work began on the selection of jassid-resistant cottons. An important aspect of the breeding work, as with the associated agronomic research, was a programme of trials on farmers' fields throughout the region to ensure the adaptability of material. The work led to the release of a series of jassid-resistant varieties from 1948 to 1958, each showing better jassid resistance, lint yield and ginning percentage than its predecessor. A further breeding programme began to confer resistance to bacterial blight by means of a hybridization programme with a resistant variety obtained from the Corporation's breeding work in Uganda. A variety with greatly improved blight resistance was released in 1961.

The WCGA was then divided into two varietal zones, northern and southern. In a practice still followed, varieties with longer, finer fibre were grown in the northern zone where there were better growing conditions. Four additional varieties from the breeding programme were released to the northern zone between 1963 and 1977 and another five to the southern zone between 1963 and 1974. The progress made in breeding was consolidated by an efficiently managed cottonseed multiplication and distribution scheme, based on the strict control of seed issued to the growing area of each ginning.

Yet another disease, fusarium wilt, became a problem during the 1960s on lighter soils in the northern area. A breeding programme to confer resistance to the disease was begun and led to the release in 1977 of UK 77. While the plant breeding work was proceeding supporting research was undertaken in agronomic practices, crop nutrition needs and other crop protection practices. This led to recommendations on sowing dates, cross-tying of ridges for water conservation, fertilizer requirements and crop spraying regimes. Research was also carried out by CRC staff based at Ilonga Research Station for the Eastern Cotton Growing Area along the coast. Reselections of the better quality Uganda UPA cotton type were developed for the area and recommendations made for cultural methods and pest control measures. By the end of the 1960s cotton production had risen to almost 27,000 bales a year.

In the period after independence, cotton research was largely undertaken by the CRC. The Corporation supplied a multidisciplinary team of between seven and eight research cotton workers to staff all of

senior cotton research positions at Ukiriguru and Ilonga. However, there had been little provision for local staff development at professional levels. The first Tanzanian cotton breeder and plant pathologist were not appointed until 1973, and the entomologist in 1974. Two national agronomists had worked in Ukiriguru in the 1960s but had subsequently left and another agronomist was not appointed until 1973.

When the CRC was abolished in 1975, the Government was faced with the collapse of its cotton research capability and ODA was approached for assistance. As a consequence, two ex-CRC cotton breeders were posted to Ukiriguru (for two and four year contracts respectively) and four other research posts were filled at different times in the duration of a project which lasted from 1976 to 1982. Training was also provided through the British Council for four nationals to MSc level (a breeder, soil scientist, entomologist and a plant pathologist).

The major technical output in this period was the release for the southern zone in 1982 of a variety which produced about 15% more lint than its predecessor. But at the end of the period of ODA support the national cotton programme was still not able to sustain a strong research effort. In 1984 FAO attached a cotton breeder and a socio-economist to the cotton research team but the work of the station generally remained constrained by manpower deficiencies in areas such as agronomy and soil science. In addition, programmes have been severely constrained by a shortage of operational funds and lack of foreign exchange to purchase new equipment, spare parts and chemicals.

Cotton production had also declined from a level of about 400,000 bales a year in the early 1970s to about 250,000 bales in the mid-1980s. Yields have also declined, from about 600-700kg seed cotton per hectare in the early 1970s to about 300-350kg/ha in 1986. Despite the earlier advances in agronomic recommendations, a survey of six villages around Ukiriguru in 1984-85 showed that less than 10% of the cotton crop was effectively sprayed, and only about 5% of cotton farmers were using fertilizers.

A Task Force on Cotton Rehabilitation in 1985 examined this performance: it identified constraints such as the organisation and financial structure of the Tanzanian Cotton Authority, the criteria by which prices for lint and cottonseed were calculated (resulting in

poor economic returns to the farmers), late payment to farmers, poor quality of cottonseed (linked to ginning), poor engineering management at ginneries, inadequate and erratic fuel supply and deterioration of the road and rail transport system. The Task Force also noted that insufficient priority had been given by government to cotton research.

It is against this evidence that the UK contribution to cotton development in Tanzania must be seen. UK aid for cotton research in Tanzania through four decades provided the catalyst for the development of a major cotton industry and a sound basis for future cotton research and development. However in 1974, eight of the nineteen research scientists at Ukiriguru were expatriates, and with the demise of the CRC, Tanzania was left with little capability for cotton research. Even by 1982 when ODA support ended, local staffing was inadequate.

In retrospect, ODA project support should have been phased out over an even longer period and stronger provision made for training national scientists. Yet it is unlikely that, on its own, the continuation of UK aid after 1982 would have made a substantial impact on the current poor performance in the cotton sector. Such support would not have been effective unless buttressed by a stronger Tanzanian government commitment to research and to the rehabilitation of the cotton industry (for example, in the provision and quality of planting seed and lateness of payments). The price structure and the performance of TCA were clearly factors in declining cotton production and incomes and the adverse impact of such factors has inhibited the effectiveness of a substantial UK contribution in research and development.

AGRICULTURAL AID TO KENYA

The Colonial Legacy

In Kenya, European settlement and colonial administration had a much more profound effect on African agriculture than in either Tanzania or Malawi. For most of the period of colonial rule, there was a major programme of land alienation leading to a rapid growth in European commercial farming in the central highlands. This, in turn, stimu-

lated the establishment of agricultural research laboratories and other services. Most of these services (for example, in veterinary and artificial insemination work and in the processing of export crops) were later of major importance to the growth of African commercial farming. Kenyan agriculture also benefitted from a regionally-established research system. The East African Agriculture and Forestry Research Organisation (EAAFRO) and the East Africa Veterinary Research Organisation (EAVRO) were established at Muguga in the early 1950s and eventually became the Kenya Agricultural Research Institute (KARI) in 1977.

Yet, because of settler pressure on the colonial government, African smallholder production was generally neglected, when compared to neighbouring Uganda and Tanganyika for example. It was not until the 1950s that major initiatives were undertaken and, in particular, restrictions lifted on African export crop production.

It was in farm planning and land consolidation that colonial initiatives in the early 1950s were to have their greatest impact. One such initiative (in Rift Valley Province) developed a model of 'balanced farming' on holdings of around 4 ha which was eventually to provide one of two main props in 1953 of The Plan to Intensify African Agriculture (the 'Swynnerton Plan'). The other prop was the reform of customary African land tenure, with land registration seen as an essential condition for African agricultural development. The central feature of the Swynnerton Plan was the issue of land titles, starting with the consolidation of holdings in higher potential areas capable of sustaining mixed farms with some export cropping where appropriate.

It was the increase in smallholder tea and coffee production which had the greatest long-term impact on African agriculture. Until the 1950s, tea had been a plantation crop and the companies had set up and financed their own Tea Research Institute at Kericho. The industry was not initially convinced of the viability of smallholder production but by the early 1960s, it had become more committed to smallholder production and participated in the financing and management of new factories. The main period of investment followed with the CDC and the World Bank financing both field and factory development under the Kenyan Tea Development Authority (see below).

Coffee was already a smallholder crop by the early 1950s, with an estimated 15,000 growers, but it was confined to areas remote from European plantings (to avoid infestation and crop theft). Subsequently the number of smallholders rose to an estimated 250,000 in the 1980s and thus development began in the colonial period through the efforts of the Departments of Agriculture and Co-operative Development, especially in nursery establishment and pulper construction. Coffee research was undertaken at the National Agricultural Laboratory (partly financed by an export cess) and a spraying programme for berry disease was instigated. After independence, responsibility for research passed to the Coffee Research Foundation.

These colonial agricultural policies led to substantial increases from the late 1950s to the mid 1960s in marketed output in areas subject to land consolidation and expansion of export crop cultivation. However, with the approach of independence, the transfer of ownership of land in the 'European Highlands' had become the most important issue of agricultural policy.

From 1960, the Land Transfer Programme (LTP) financed the process of buying mixed farms and, through the Land Settlement Department, the subdivision of plots and the settlement of African smallholders. 'High-density settlement' was the initial thrust of policy with priority given to the landless with the British Government ultimately providing finance to compensate the European farmer. But 'low-density settlement' on larger units attracted additional CDC and World Bank finance for relatively progressive farmers and, in some cases, land was acquired for commercially-managed 'national farmers' under an Agricultural Development Corporation (ADC) which was established in 1965 and which continues to manage a number of seed and pedigree stock farms (see below).

LTP funds continued until the mid-1970s and in financial terms, dominated the UK aid programme. In the 1966, 1970 and 1973 Aid Agreements, the LTP continued to constitute the largest single item (some £23m out of a total of £46m of capital aid). With the phasing out of the grants for land purchase and settlement there was some expansion of project aid commitments. In volume terms, CDC loans contributed the major share of agricultural project aid since the early 1970s with the main bulk of investment in tea, coffee and

sugar. However, in the 1980s the only major new CDC commitment has been equity finance to the National Oilseeds Development Company, with private capital and management from East African Industries (part of the Unilever Group).

There has been a greater CDC concentration upon smallholders in Kenya than in either Tanzania or Malawi. The contribution to the Kenya Tea Development Authority (KTDA) is discussed below. CDC support for the coffee industry has, like tea development, been mainly through developing processing facilities: new pulperies have been constructed or improved for the 140 smallholder cooperative societies involved in coffee marketing. The other major CDC agricultural investment has been in sugar with almost 28,000 cane-growers in higher rainfall parts of western Kenya supplying a factory at Mumias where, in 1976, £4.5m was committed to a factory extension and road building within the area under cane.

CDC's role as a 'venture capitalist' in Kenyan smallholder agriculture is less important than it once was. Kenya's tea and coffee industries are now well-established and close to their limits in terms of land development; and Mumias will shortly meet most of Kenya's sugar requirements. CDC's role in 'institution-building' is also now less important and, in any event, it is necessary to distinguish between the various crops. In the case of tea, there has been considerable CDC influence in the design of the KTDA and its early period of management; in the case of the Mumias Sugar Company, it has been a UK private consultancy (Bookers International Agricultural Services) which has been responsible for design and management with CDC simply in a financial role; and in the case of coffee CDC has not been a major influence on either the design of the institutions to assist smallholder production or on the management of the industry.

Another feature of the shift into project aid support for agriculture in the 1970s was the emphasis upon specific research initiatives. Previously, UK aid provided budgetary support for both EAAFRO and EAVRO. In EAAFRO, except for work on crop virology, all of the new research projects were of short duration (3-6 years). As a consequence, scientific work was frequently passed onto a small number of experienced Kenya scientists with limited funds. The examples of maize agronomy and potato are discussed below and both indicate the limitations of project aid in support of agricultural research.

There has, in fact, been a substantial decline in UK support for crop research in Kenya. In 1975 there were 24 TCOs engaged in various aspects of research but by the mid-1980s the main area of work was confined to pest management, with ODA's Research and Development Funds for crop research of 'regional' application increasingly concentrated in the UK itself.

In the case of animal health projects, on the other hand, R and D funds have continued to be directed largely to Kenya and have helped to maintain the strength of the former FAVRO. There has been also a major input into research on East Coast Fever (see below) where long-term project support from ODA has alleviated a difficult staffing and budgetary situation in the veterinary research services.

ODA agricultural aid has been deployed in support of poorer agricultural regions particularly those with low and erratic rainfall. The main direct involvement in drylands projects began with the participation in the Second National Livestock Development Project in 1975. The ODA component consisted of livestock marketing but little progress was made in increasing commercial off-take from the pastoral areas and the World Bank-led project was wound down in 1982. More recently, ODA's involvement has been through the national Arid and Semi-Arid Land (ASAL) Programme under which the three districts of Embu, Meru and Isiolo (EMI) are supported by what could be termed an ODA integrated rural development project consisting of several components including health centres and minor roads. EMI is discussed below.

There has been a substantial decline in the number of agricultural projects supported by ODA in the 1980s. This is only partly a reflection of the reduced opportunities for CDC investment. More importantly, ODA support for agriculture shifted, after 1982 in particular, towards programme aid directed to foreign exchange difficulties within the agricultural sector. This eventually became termed 'Natural Resources Private Sector Project Aid' (see below) which provided £5.5m primarily for agricultural machinery and spare parts from UK suppliers. This was also held to be ODA's contribution to a co-ordinated donor effort led by the World Bank in support of policy reform in Kenyan agriculture.

A related shift of emphasis was towards 'sector aid' which, in practice, has meant a package of aid instruments (including programme aid) designed to improve the weak commercial performance of the ADC established in 1965 (see above). Over £4m was awarded to ADC on condition that it implemented an agreed divestiture programme and concentrated upon trading and production activities which could not be adequately undertaken by the private sector. These activities included the production and distribution of seed maize and breeding stock and replacement machinery, as well as technical assistance, has been provided.

EMI Districts Programme

The emphasis on poverty alleviation in the mid-1970s focussed attention on the drier regions of countries such as Kenya where agricultural production and incomes lagged behind more favoured wetter regions. Following the earlier SRDP pattern of donor-designated areas of operation, the Government began seeking support for selected dry-land districts in 1977 and by the launch of the 1979-83 Development Plan it had in place agreements in principle to finance a series of 'regional rural development programmes'. ODA agreed to support what became the EMI Districts Programme, which meant, in practice, poorer areas of the marginal cultivation and nomadic pastoralism. ODA advisers accepted that the main thrust of agricultural aid spending should be on soil and water conservation, forestry and stock improvement, but they wanted to ensure that projects were carefully prepared in collaboration with the district authorities.

The ODA approach to ASAL therefore developed into a slow build up of specific interventions largely under the supervision of TCOs. In the first three years of the programme, the main responsibility for preparing projects (and ensuring their incorporation into central ministry and district budgets) fell upon a TCO appointed to the post of Adviser to the Provincial Planning Office for Eastern Province in which the three Districts lie.

The initial work on soil conservation was based on a small catchment in lower Embu with earthworks to reduce run-off into farmers fields. With an engineer and land-use planner in post, a programme of research and development began in four catchments linking physical works to on-

farm conservation and rehabilitation measures (including afforestation) in collaboration with farmers. The training of field staff in soil and water conservation planning was also part of the ODA programme, and these activities were continued into a second phase (from 1986) which was termed the 'dryland farming' project.

The forestry work involved tree planting, nursery development and research into species and planting methods. Support for stock improvement has meant the development of a sheep and goat breeding centre which has led to sales of animals (hopefully with greater disease resistance and faster growth rates) to local farmers some of whom have been trained as out-breeders. ODA has been unable to identify any significant initiatives in cattle and camels apart from some finance for post-drought restocking and a number of investigations in Isiolo on grazing management and water development.

Given the relatively modest level of UK aid in the EMI programme there have been some significant achievements. There are a number of physical changes attributable to ODA support: the goat and sheep station, soil and water conservation works, forest nurseries etc. But the main achievement has been to enhance the capacity of line departments in Meru and Embu districts to undertake technical work in support of farmers. Financial aid supported by long-term technical assistance and consultancy (much of it based on the work of LRDC staff) bolstered the work of the Departments of Agriculture (in soil conservation and agronomy), Livestock Development and Forestry.

The conditions for such institutional strengthening appear to be two-fold: recognised UK competence (which permits acceptance of expatriate manpower) and technical interventions which are appropriate to field services capability and management. It is because such conditions are lacking that it is difficult to envisage, at present, any similar institutional strengthening in the animal health and range management services in Isiolo district. However, in the one explicit 'institution-building' component of the programme, ODA has not been particularly successful. The post of Adviser to the Provincial Planning Office was designed to develop the capacity of district and provincial authorities to manage effectively a decentralised planning system; but there is little evidence that planning capacity has been enhanced or, more to the point, that decentralised planning has become

an effective instrument of policy.

A more narrow form of institutional development is represented by EMI, whereby ODA support to technical services has enhanced their capacity to address local constraints. This form of support is much more a feature of ODA's involvement in EMI than in ODA-assisted integrated rural development projects in Malawi and Tanzania. In Malawi there has not been the technical assistance support; and in Tanzania the large volume of technical assistance has generally not been incorporated into the day-to-day work of technical departments. The lessons of EMI are not therefore confined to IRD-type projects; they also suggest some UK strengths more generally in the provision of agricultural technical services.

Project Aid for Agricultural Research: Maize and Potato

Following the ending of budgetary aid to research institutions in the 1960s, ODA instigated a number of specific research projects. These included the Maize Agronomy Project which ran initially from 1968-71 but was subsequently extended in phases until 1978, and the Potato Research Project which ran from 1970 to 1976. As elsewhere, such relatively short-term periods of UK support failed to establish programmes and institutions that are capable of sustaining themselves without external support.

It was not until the mid-1950s that a systematic breeding programme was started in maize at Kitale (in 1955) for a late maturing variety and at Katumani (1956) for an early maturing variety. Several hybrids were developed but there was little immediate adoption by smallholders, and ODA was asked to support a project to investigate the agronomic and physical characteristics of new hybrids and to recommend measures to improve yield performance and farmer returns from maize cultivation.

The ODA-supported work was confined to Kitale and was successful in some respects. By 1975, most farmers in the area with 8ha and above had land under hybrids and on-station trials showed potential for substantial yield improvements. However, smallholder production of maize in both the Kitale area and elsewhere in Kenya remained well below yield expectations. An evaluation for ODA in 1984¹⁰ concluded that the project had concentrated too much on achieving record results

at the expense of applied agronomic work in smallholder conditions and this insufficient support had been given to strengthening national research capability. In particular the government-funded regional maize agronomy units contributed little to research output. Since the end of the ODA project, maize agronomy research at Kitale has continued but shortage of funds and frequent staff changes have severely constrained activities. This has meant that a further project has become necessary (with USAID support) to strengthen national maize research capability.

In the potato research project the aim was a breeding programme to provide new and better varieties resistant to blight and other diseases and to provide information necessary for the control of bacterial wilt resistance. The research station at Tigonj was designated as a Potato Research Station in 1972 and it was here that a disease free centre was developed for raising and screening seedlings for blight resistance and for multiplication purposes. A new variety, selected from hybrid seed supplied by the Scottish Plant Breeding Station, was officially approved for commercial production and released in 1973 under the name Kenya Baraka. In 1974, five further clones were bulked up and certified from virus free stocks.

ODA ended support for potato work in 1976, when it was considered that an effective commodity research station had been established. In the event, potato research in Kenya deteriorated since 1976. Once again, funds have been inadequate and the Station has reported breakdowns in its tractors, cold stores, and irrigation system. In addition, staff have left often to more remunerative posts with better facilities, such as the Coffee Research Foundation. In terms of building local research capacity, the ODA project might well have not existed.

Smallholder Export Crops: KTDA

The development of smallholder tea production in Kenya through the KTDA is generally regarded as one of the major success in tropical agricultural development. In fact, it was the Department of Agriculture's work in the 1950s on a number of small, subsidised and closely-watched pilot schemes in Central Province encouraged, first, the establishment of a Special Crops Development Authority in 1960 and the subsequent large leap into what is now an industry of 145,000

smallholders providing green leaf to 39 factories operating without subsidy.

Much of the success of KTDA can be attributed to the Department of Agriculture/SCDA period, and to subsequent work by UK technical officers attached to the KTDA. This work included, most notably, the development of the 'two leaves and a bud' plucking regime which did so much to establish the premium quality Kenya tea, and the extension to growers of vegetative propagation techniques.

CDC provided loan finance to the SCDA and the successor to KTDA but it was the Department of Agriculture, not the CDC, which was the main architect of KTDA, a forerunner of similar smallholder crop authorities elsewhere. CDC's involvement in KTDA management was also less than in other smallholder projects subsequently. For example, the General Manager post was never held by a CDC officer: the post was held successively by British colonial administrative service officers until the first Kenyan General Manager was appointed in 1969.

Yet, loan finance apart, CDC had an important role in the rapid expansion phase of KTDA in the late 1960s and early 1970s. For example, CDC was particularly insistent on the establishment of the growers' committees which eventually assumed ownership and control over the factories, and it was a CDC accountant who developed the computerised system which handled anything up to 200 delivery slips in a season from individual growers and still managed regular monthly payments. Under Kenyan management in the 1970s the KTDA successfully extended its function into factory management and domestic tea marketing through its subsidiary company, Kenya Tea Packers. Furthermore, while other public agricultural agencies were going through periods of damaging cost escalation, KTDA maintained relatively high levels of operating efficiency.

The success of KTDA cannot be put down entirely to effective management. The rise in incomes of smallholder tea growers over the period as a whole is also attributable to the good natural growing conditions, the generally favourable prices for Kenyan tea on the world market, and the support of an estate sector which provided a strong technical base for tea research and development at both the field and factory levels.

Yet CDC's involvement in the management and financing of KTDA has been important to its success. CDC has had a major influence in maintaining the importance for KTDA of its commercial autonomy, its generation of revenue from its own (rather than government) cesses, and its accountability to growers. These management characteristics have been difficult to establish elsewhere, as the Malawi evidence has shown.

Theileriosis (East Coast Fever) Research

UK aid for theileriosis research has involved the sustained use of specialized expertise in support of a national research programme, which in this case has been supplemented by postgraduate training and by support for field extension of the research results.

Theileriosis is a complex of diseases transmitted by ticks: in east and central Africa T. parva, which causes East Coast Fever (ECF), is the most important with an estimated 0.5 million dying annually from the disease, as well as losses from reduced growth and fertility. The first attempts to control ECF came during the colonial period with attempts at mandatory dipping (or spraying) with acaracides in disease-prone areas together with regulations on cattle movement. However, such measures were, and remain, difficult to apply on a national scale and, in the pre-independence period, an immunisation method was developed whereby animals were infected and the development of the disease blocked by treatment, with tetracyclines, administered in the incubation period.

This infection and treatment method was further developed after independence in a FAO/UNDP Tickborne Diseases Project at Muguga and in the 1970s the Veterinary Department approached ODA to conduct investigations prior to establishing a field programme. These investigations covered the effects on the productivity of immunised cattle, the possible discovery of strains of T. parva which did not cross-immunize, the danger of the treatment leading to carrier animals which would spread the disease, and the overall practicality and safety of the method itself. Two ODA projects were established at Muguga, one concerned with the epidemiology, the other with the therapy of the disease. There has also been substantial ODA support for training animal research scientists at Muguga, including PhD work in virology and protozoology supervised by project staff.

As a result of this work, the infection and treatment method was adopted and recommendations were released for two drugs for therapeutic purposes. Following up this work ODA agreed in 1985 to support a team at the Veterinary Department which is responsible for an extension programme of ECF treatment among stock-keepers.

Natural Resources Private Sector Project Aid

In 1982 the UK met Kenyan requests for balance of payments support with a £2.9m foreign exchange allocation for the purchase of essential imports for the agricultural sector. This was the beginning of what later became 'Natural Resources Private Sector Project Aid', which in 1985 was to provide a further £6.5m for imported agricultural inputs. Both operations were regarded as 'projects', rather than the programme aid which they more typically represented. However these operations, though quite unlike conventional project aid, were directly targeted on private sector demands for agricultural imports, unlike the £15m allocated as programme aid in 1975 and 1976 for a range of UK capital goods and to offset repayments on land transfer loans.

This earlier aid had been subject to an ODA evaluation which found that, in an absence of a foreign exchange problem, it was not adding to Kenya's UK imports and may have simply been displacing orders financed commercially. But the more recent batch of 'natural resources private sector aid' allocations had their origin in a different economic circumstances and they were linked to adherence to the terms of the new IMF standby agreement, and to the release of funds under SAL II.

When Kenya requested new emergency assistance at the end of 1984 to cope with the severe drought, the pattern had already been set. The UK responded with a package of £6.5m of natural resources import financing to be directed to the private sector. The content of the goods was specified - agricultural spares, fertiliser and other agricultural chemicals, veterinary drugs, and 'other mutually acceptable imports'. Most of the capital equipment was intended to be for replacement use (pumps, diesel motors etc.) on the grounds that it would have less of a displacing effect on commercial orders, and a more direct effect on relieving bottlenecks.

However, unlike the 1982 allocation, the provision of natural resources inputs aid was not specifically linked to the Government's adherence to an IMF standby or a World Bank SAL. The aid was offered as the UK's 'contribution' to structural adjustment, in which operation the World Bank was acknowledged to be the lead donor. But ODA's objective was to supply fast disbursing drought-relief, which it did not wish to be hedged around by multilateral conditions beyond the capacity of the Kenyan Government to meet. An example was the World Bank insistence on liberalisation of grain marketing, which ODA did not regard as an appropriate issue on which to base bilateral aid allocation decisions. In the event, Kenya coped with its drought better and more speedily than its neighbours; and after failing to resolve its disagreement with the World Bank over grain marketing, Kenya did not take a third SAL.

Disbursements under natural resources private sector aid proved slower than expected, due to lack of immediate demand and a lessening of the foreign exchange shortage after 1985 as coffee and tea export prices enjoyed a boom. In this context of relative foreign exchange abundance, the terms of the aid appeared unattractive. Credit terms for local purchasers were more onerous than under normal commercial arrangements, and in addition they were obliged to procure through a third party, the Crown Agents.

In these circumstances, the targeting of programme aid on a particular sector or end-user had only limited relevance. As shown in ODA support for the ADC, earmarked foreign exchange can alleviate the difficulties of particular agencies and facilitate the introduction of new measures. Yet taken overall, the main effect of Natural Resources Private Sector Aid has been simply to expand the foreign exchange resources available to Government and private sector combined. It is difficult to argue that such aid is either directly beneficial to the private sector or even directly employed within natural resources.

CONCLUSIONS

In all three countries, the pattern of agricultural development has been influenced both by the colonial inheritance and by UK aid in the period immediately after independence. In this respect, Kenya is in a special category especially as its African farmers inherited a commercial and technical infrastructure from settler agriculture which the other countries lacked. But there are a number of common colonial agricultural legacies of differing degrees of longevity. All three countries inherited a system of public regulation of much of the marketed output with a structure of price controls, movement restrictions and some monopoly powers. The ways that this system has been employed have varied from country to country as the chapters above describe, but most of the system has remained in place and been consolidated.

The UK also bequeathed to the three countries a structure of support for smallholder export crops which put an emphasis upon producer responsibility for the financing of services such as research and extension. This structure has survived less well but it is still the case that research efforts in crops such as tea, tobacco and coffee are organised by industry-financed foundations and the decline in cotton production can be partly attributed to the failure of the industry to finance its work. Furthermore, the most successful extension services in the region are still financed from cesses and charges levied through crop authorities.

The impact of ODA on domestic agricultural policies in the 1970s has been much reduced and, as a matter of policy, aid allocations have been influenced by the priorities agreed by governments with the World Bank and other donors. The attachment to the World Bank was deliberate in the case of project aid in the late 1970s and early 1980s and reflected confidence in the much larger World Bank professional input into agricultural planning. It also reflected ODA support for notions of co-financing and donor coordination over nationally-agreed strategies (such as NRDP in Malawi and ASAL in Kenya).

While ODA's independent influence on agricultural policy in the three countries has been relatively unimportant, it is evident that domestic

agricultural policy has frequently played a major role in determining the effectiveness of UK aid. In particular, several of the projects instigated by ODA have been constrained by lack of effective government support. In some cases this is where prices regulated by government have posed a disincentive to production (eg. cotton in Tanzania) or where public marketing organisations have been allowed to trade inefficiently (eg. seed in Malawi or livestock in Kenya). But the more widespread constraints have been the inability or unwillingness of governments to provide appropriate budgetary and staff resources to activities where ODA has committed assistance.

Programme Aid

These limitations on the effectiveness of agricultural project aid have contributed to a shift into programme aid in the 1980s and ODA, in all three countries, has seen programme aid as a mechanism for supporting the agricultural sector. Programme aid has been used to relieve balance of payments and import constraints which have been held to adversely affect the agricultural sector; and programme aid has also been used as part of a coordinated effort with other donors to encourage changes in agricultural policies and institutions designed to create a more favourable environment for subsequent agricultural aid investment.

These two agricultural aspects to programme aid - agricultural inputs aid and policy reform - do not invariably sit together. In the case of the 1984 Malawi Programme Grant there were no specific agricultural targets and finance went largely to manufacturing industry and services, which at the time of actual disbursement did not suffer any serious foreign exchange problems. But the Grant was part of ODA support for a World Bank-led programme of adjustment measures in agricultural policy and institutions in a series of SALs. In Kenya, Natural Resources Private Sector Aid was directed at major stockists of UK farm machinery and suppliers operating in the commercial sector. This was less attached to SAL negotiations than in Malawi and when difficulties arose for the World Bank from Government reluctance to deregulate the domestic grain trade, there was no discontinuation of UK aid. In Tanzania an altogether more robust approach was adopted with both programme aid and new project aid withheld pending IMF

agreement, and despite a series of domestic agricultural reforms in the mid-1980s. On agreement with the IMF, programme aid included a substantial agricultural inputs package.

Such agricultural inputs aid (however 'fast disbursing' and helpful to governments in the generation of counterpart funds) has not, in practice, always been of direct benefit to agriculture as it has not proved possible to predict foreign exchange requirements to the sector itself. In both Kenya and Malawi there was less demand than anticipated from agricultural inputs importers who had, in effect, privileged access to foreign exchange and who had no incentive to use the relatively cumbersome process of procurement under programme aid.

The impact of programme aid is evidently difficult to assess in terms of a particular donor in a specific sector such as agriculture. But the growing use of bilateral UK programme aid raises the question of whether, as a form of aid, this represents the best use of available aid resources given UK strengths and capabilities. A related question is whether the specific ODA priorities within project aid - the main alternative form to programme aid - are those which represent the best use of UK resources available for agricultural development.

There have been four areas of substantial UK project aid investment - integrated rural development, agricultural research, agricultural technical services, and smallholder crop authorities - and it is on the evidence of these four areas of aid that a case has to be sustained for a programme of more directly targeted UK support for agriculture.

Integrated Rural Development

Over the late 1970s and early 1980s a clear spending priority for ODA in African agriculture was a series of area-based integrated agricultural development or IRD projects, often in marginal environments and invariably concentrating upon low technology, low income farming. That generation of IRD projects is now frequently criticised as being over-ambitious and poorly-prepared (in terms of their basis in improved agricultural technology) and too expensive in terms of the future recurrent costs of extension and farm services infrastructure. This study has examined three ODA-assisted projects

and concludes that the differences between them do not support the generalised view of over-ambitious design and poor preparation.

Above all, the design and content of the three programmes varies greatly. In the most successful of the projects, the ODA approach to EMI was a slow build up of specific interventions largely under the supervision of TCOs. In Mtwara-Lindi, the ODA programme had some capital components but it was primarily a major regional planning exercise. And Phalombe, the largest of the three in expenditure terms, was primarily an agricultural services project involving the provision of credit, extension, physical infrastructure and transport.

'Over ambitious' and 'poorly prepared' inadequately describe all the IRD programmes. It is the case that Phalombe largely accepted an existing package of agricultural services despite ODA reservations about the economic and technical assumptions on which it was based. However, in Mtwara-Lindi ODA established a detailed series of resource studies and finally found few opportunities for economic investment in agriculture. And in EMI, ODA selected a small number of interventions for support within the district agricultural services.

The lessons of ODA's poverty-focussed agricultural projects suggest that the particular technical difficulties of marginal and remote areas require a major research effort and that individual components are most likely to be effective where specific technical services are supported. In the three cases reviewed, ODA has not been successful in firmly establishing regional planning and implementation mechanisms, and it has found it administratively difficult to support a number of locally-managed infrastructure projects and welfare services in remote rural areas. ODA is probably correct in changing its approach from its earlier multi-sector 'rural development' but where it has concentrated upon specific technical interventions and worked to assist the line departments of the ministries involved in natural resources its work has been generally effective.

Agricultural Research

When the three countries became independent in the 1960s, their agricultural research services were still staffed mainly by British expatriates and continued manpower and financial assistance was needed to strengthen and maintain their research capability. In response, the UK provided personnel to fill key scientific posts for the Agricultural Research Council and the Agricultural Research Services of the Ministry of Agriculture, Malawi and for the regional centres of EAAFR0 and EAVRO. Budgetary support was also provided although this was phased out from 1970 awards. The numbers of long-term research postings also declined as greater emphasis was placed upon specific research projects.

The general record of government research performance in the three countries suggests that the basis provided by the colonial period and subsequent post-independence budgetary aid has not been consolidated. Project aid has had only a limited impact; training has been deficient; and longer-term institutional development has not occurred. In several projects, the contribution of governments to local costs has been inadequate and at the end of UK involvement, the level of funding and activity in the project's field of research has declined further.

Yet in the study, we recount several studies of relatively successful UK research aid. These include support for cotton and tobacco research in Malawi, veterinary work in Kenya, and cotton in Tanzania to the early 1970s. All of these cases illustrate the importance of long-term research aid with a series of initiatives to assist institutional capacity to address problems. However, other cases of research aid, such as maize in Kenya and Malawi and potato in Kenya, have involved significant initial technical advance but ultimately it has had less impact than it should because of discontinuity and a limited range of support measures.

It is not surprising that the greatest impact has tended to be made by the longest supported research projects. The length of support provided by the Cotton Research Corporation (CRC), more than 50 years in Malawi and nearly 40 years in Tanzania, was the main factor in the development of the cotton industries in all three countries and it has

left a continuing mark on subsequent research. Long-term support has also been most effective where institutes have been well supported nationally, for example, the Tea Research Foundation and Tobacco Research Authority of Malawi and the Coffee Research Foundation of Kenya.

Smallholder Crop Authorities

Much of the interest in CDC's contribution to African agriculture has been on the design and management of Smallholder Crop Authorities (SCAs). In practice, the SCAs vary considerably. In the case of the tea in Kenya and coffee in Malawi the CDC approach has been to concentrate upon building processing plant and facilitating marketing as a means of encouraging smallholder production on existing farms. In the case of sugar in Malawi, a settlement scheme model of supervised production has been instigated. And, also in Malawi, the tobacco scheme involves both supervised settlement schemes and an attempt at stimulating smallholder production outside the scheme area.

The overall record of CDC investment in the smallholder production of crops such as sugar, tobacco and coffee has shown that the level of factory throughput and the ability of smallholders to pay for services is frequently constrained by their low yields (compared to estate performance, for example) and by their readiness to switch labour and other inputs away from the export crop once returns show signs of deterioration or uncertainty.

The outgrower schemes (such as KTDA) have been more successful in increasing production than the settlement schemes which are also normally more costly to establish and administer and thereby place heavy financial burdens on tenants within the scheme. In irrigated smallholder sugar in Malawi, for example, loan repayments have been poor and it has proved difficult to retain tenants on the scheme. In the case of Kasungu Flue-cured Tobacco Authority, substantial annual subsidy payments have become a feature of an Authority designed to be self-financing.

The requirement on CDC that its projects are, in the longer run, commercially viable and produce a financial return means that its opportunities to develop new smallholder schemes is restricted, even

where capital aid is provided to cover development costs and where technical co-operation funds are used to cover some management costs. It is significant that the level of private sector investment in similar schemes is modest. BAT in Kenya and, more recently, East African Industries in collaboration with CDC on oilseeds, are among the exceptions. Nonetheless, CDC venture capital and management skills have clearly made a significant contribution to African smallholder production of a narrow range of export crops and the agricultural staff of CDC remain an important resource in the UK aid programme.

Agricultural Technical Services

The main successes of UK agricultural aid in the three countries are in the provision of expertise and training in agricultural technical services and associated farm inputs. This includes the supply of planting materials and breeding stock, animal health services, crop protection services, and soil conservation services and minor irrigation. Some of these successes are attributable to the work of ODNRI and the case of armyworm control in support of local research and extension services exemplifies the value of home-based scientific units. Similarly, the work on East Coast Fever in Kenya shows the importance of long-term support involving capital and technical assistance aid. There is also evidence of the effectiveness of ODA assistance in the development of seed industries. The availability of specialist skills under the aid programme have had a major impact in Malawi (and to a lesser extent, Tanzania) in production, multiplication, testing, processing and storage.

In EMI in Kenya, ODA support has led to an improvement in the capacity of the Departments of Agriculture, Livestock Development and Forestry to undertake technical work of direct relevance to farmers. A condition for effective support in this case and also in the case of Mtwara-Lindi is that there are technical interventions appropriate to the capabilities of existing field services. It is because such a condition is lacking that it is difficult to envisage, at present, any similar institutional strengthening in the animal health and range management services in Isiolo district, and it has proved difficult to support extension services in southern Tanzania.

The overall evidence of UK project aid indicates that domestic policies have diminished the effectiveness of directly-targeted support for agriculture. Yet the current level of donor support for programme aid, linked to policy reforms designed to assist agricultural output, provides the basis for a revival of more targeted mechanisms of support; and among the large number of donors currently operating in African agriculture, ODA appears to be particularly well-placed to move its policies forward into investments in technical services and research. It is such investments which still constitute the most important foundation for major increases in farm production and incomes in the continent.

Although the UK's scientific manpower with experience of African conditions has been depleted since the 1960s, ODA is still able to respond to the challenge of strengthening agricultural services and developing productive investments in the sector. If there is one area above all where ODA could claim a 'comparative advantage' among donors it is in the range of technical services and research it is able to provide. The record of performance in Kenya, Tanzania and Malawi and the continuing availability of specialist manpower suggests that ODA has a particularly important role among donors in direct assistance to African agriculture.

Footnotes

1. Development Cooperation 1986 Report, Paris:OECD.
2. UK Agricultural Aid to Kenya, Tanzania and Malawi, ODA 1988 (EV 388), Tables 2.2 and 2.3.
3. UK Agricultural Aid, Table 2.6
4. Project Identification: An Evaluation of ODA's Procedures and Practices, ODA 1985 (EV 291).
5. UK Agricultural Aid, Table 3.1.
6. Evaluation of CDC Projects: Malawi Smallholder Coffee Authority, ODA 1985.
7. Evaluation of Phalombe RDP, ODA 1986 (EV 387).
8. UK Agricultural Aid, Table 4.9.
9. UK Agricultural Aid, Table 5.1.
10. An Evaluation of the Maize Agronomy Research Project 1972-78, ODA 1983 (EV 241).
11. Review of Programme Aid, ODA 1980 (EV 159).