An investigation of the organisational features, commodities and situations associated with contract farming and outgrower schemes in Sub Saharan Africa and of the factors which are critical to their successful operation

Research Report completed under ODA Crops Post-Harvest Programme, Project Number A0439

R.Stringfellow

February 1996

Contents

Summary

The report summarises the characteristics of successful contract farming and outgrower schemes in Sub Saharan Africa. It uses secondary data drawn from the literature on contract farming and some primary data collected on recent missions to Malawi and Zambia. Further fieldwork in these countries is proposed.

In the context of agricultural market liberalisation and with the reduction of state responsibility for agricultural service provision, contract farming or outgrower schemes (the terms are used interchangeably in this report) are attracting increasing attention as an institutional form for private sector led agricultural development in rural Africa.

A theoretical assessment of the advantages of contract farming arrangements over other forms of raw material sourcing (spot markets, estate production) suggest that where raw materials must reach stringent quality criteria, are highly perishable or require labour intensive husbandry, contract farming will be advantageous. A review of actual experience suggests that other factors have played an important role in the establishment of successful schemes, or equally, have prevented schemes developing.

Access to markets is one factor. This has two aspects: access to the necessary physical infrastructure and transport to move production to markets; and sufficient financial incentives in the form of profitable market opportunities. Another factor is competition: where companies face a lot of competition for the purchase of products, outgrower schemes can collapse as sales are diverted by producers to other buyers.

In the past governments have played a direct role in establishing outgrower schemes, often through state run parastatals operating as a single marketing channel for a given commodity. Given the much reduced risk of leakage under a monopsonistic marketing system, the coincidence of state marketing policies and outgrower arrangements is not surprising. Many of these schemes were joint ventures with donors.

Government support for outgrower schemes was often framed in terms of broad national objectives: integrating the

smallholder sector into the commercial economy; opening up new parts of the country through settlement schemes; increasing export revenues and attracting foreign investment into the country without the need to make the politically sensitive decision of granting a foreign company land rights.

In the 1980s and 1990s, as governments have withdrawn from direct involvement in agricultural production and marketing, concessionary financing for government outgrower schemes with broad developmental objectives is disappearing. The role of government has been redefined and is to create an enabling environment to encourage investment. For their part, private sector investors can be expected to prioritise commercial viability over any broad developmental objective. However, a successful scheme does require the parties involved (the company and the producers) to draw mutual benefits, otherwise it will collapse.

Factors internal to the design and operation of the scheme which influence a successful outcome are (i) the contractual relationship (what services are provided by the company and on what terms; what commitments are made by the producer in return); (ii) the appropriateness of the technology promoted in relation to existing farming systems among smallholders and the prevailing patterns of labour allocation and resource availability within households; (iii) attention to issues of food security; (iv) the distribution of risk between the company and farmers; and (v) the degree to which farmers can organise and bargain collectively with the company to influence the distribution of benefits or allocation of managerial responsibilities.

A number of external factors which are not directly under the control of the company but which have a key bearing on the success of a scheme are prices in international markets; the macroeconomic stability of the country; and climatic factors.

In Malawi, contract farming is viewed as a means to diversify the agricultural sector and there is considerable interest in it as an institutional form. A number of crops have been identified as suitable candidates for cultivation under an outgrower system and this is facilitated by the operation of the existing "estates" system. However government could do much to improve the enabling environment for private investors. With regard to specific efforts to promote outgrower schemes in recent years, field research is needed to suggest improvements.

In Zambia, contract farming has been embraced as a concept by government, farmers' organisations and donors both to promote agricultural diversification and to improve farmer access to inputs. A number of schemes are already operating, particularly in cotton, but more recently in paprika, castor bean, tobacco and maize. Potential exists for other crops to be developed in this way. The major constraints identified were access to marketing information among investors and the diversion of sales by smallholders.

Field research is proposed to set up and plan a programme of research into recent and ongoing outgrower schemes in Malawi and Zambia. This will be used to identify two or three key companies prepared to undertake collaborative research with NRI on the development of new institutional arrangements to promote successful and sustainable integration of smallholders into outgrower schemes.

Introduction

This desk review is funded under ODA's Crop Post Harvest Programme. The framework for the research is the improvement of marketing and financing services for traders and farmers in liberalising economies. The Terms of Reference required the researcher to identify the types of scheme, the commodities and situations for which contract farming/outgrower schemes are appropriate as well as the critical success factors.

Economic liberalisation in many African countries, combined with the need to service significant national debt, has led to an increasing interest among governments in promoting agricultural exports, both traditional and non traditional alike. At the same time macroeconomic reforms have led to a reduction of the resources that the state has available for agricultural development, limiting its ability to assist directly in the process. Given this context, new institutional frameworks are needed to replace disappearing state services which can provide farmers with the resources to take advantage of new opportunities.

The immediate demand for this research was a request from the Managing Director of Press Agriculture Ltd in Malawi. The Press Group is the largest company in Malawi and employs some 20,000 people on its estates. It remains committed to tobacco production but liberalisation in the marketing of export crops has made agricultural diversification an important objective. Outgrower schemes are a favoured institutional option, but the company is aware that smallholders generally are rather suspicious of such schemes which have been characterised in the past by top-down planning, excluding village authorities and farmers themselves. For this reason Press Agriculture believed it would be worth conducting desk and field research in to the success and failure of outgrower schemes.

A visit to Zambia in September/October 1995 confirmed the impression that there is considerable regional interest in contract farming/outgrower schemes. The Zambia National Farmers Union believes that they could play an important role in assisting smallholders to diversify their production systems and gain access to inputs which are no longer available through government financing. Donors are taking a similar positive view: the European

Union funded Smallholder Development Projects in Kabwe (Central Province) and Mpongwe (Copperbelt) are assisting in the establishment of schemes.

From a theoretical perspective, contract farming and outgrower schemes are an appealing option. Contract farming is understood here to mean a contractual arrangement between farmers and a firm, whether oral or written, specifying one or more conditions of production and marketing of an agricultural product (an outgrower scheme is very similar and will be used interchangeably in this discussion, although in the past it has sometimes to connoted a government scheme, whilst a contract farming arrangement is considered to involve only private entities). The contract will commit the grower to producing a certain commodity at a certain time for an agreed price, and in return the firm markets the commodity and may provide extension and other services during the production stage.

The attraction of such arrangements are the mutual benefits received by the grower and firm as market inter-linkage reduces risk and uncertainty for both parties. For example where a firm agrees to buy all that is produced of a given quality at a pre-determined price, the grower is assured of a market. If the firm also provides inputs and extension advice, the production risk facing the grower is reduced as well. As state marketing boards and subsidised agricultural credit disappear in many African countries, the potential importance of such schemes is clear.

From the firm's perspective, contract farming is a means to capture a regular supply of raw materials into a processing or marketing system. If a firm has invested heavily in a processing utility or in marketing infrastructure it needs to ensure a level of throughput approaching maximum capacity in order to offset investment costs and maintain an efficient level of operation. Contract farming allows the firm to do this: the contract can include quality specifications, delivery times and prices, removing the risk and uncertainty that would be associated with sourcing raw materials from spot markets.

Spot markets do not represent the only alternative to contract farming arrangements. Estate production can supply a firm with a regular and reliable source of inputs for processing or marketing. However this involves the firm in significant additional expenses, specifically in buying or leasing land, establishing plantations and hiring a workforce. In some countries, local land tenure systems mean that access to land, whether on a leasehold or freehold basis, is constrained. Employing a workforce can also bring unexpected problems. In addition to direct wage costs, estate labour carries considerable transaction costs to ensure high labour productivity: hiring, training and supervision. It carries risks of disruption through industrial action. By contrast contract farming has no direct labour costs and the risks of poor performance are carried by the farmer who is paid for what he produces, providing him with strong incentives to acquire and develop his skills. The arrangement may also provide access to household labour; in order to meet the contract, a farmer may draw on all the labour resources available within the household, requiring members to work long hours without regard to the return to their labour. By contrast, hired wage earners work on the basis of a fixed working day.

These introductory remarks provide a broad overview of the theoretical issues which may recommend contract farming arrangements to firms and growers. Key issues appear to be access to marketing and other agricultural services for farmers and, for firms, the need to offset investments in expensive marketing or processing facilities by capturing a reliable supply of raw materials.

In the following sections the experience of schemes in Sub Saharan Africa will be assessed. Access to reports at the Commonwealth Development Corporation, which has been involved in many outgrower schemes in the region, provided the author with many insights which were supplemented by the opportunity to discuss issues arising with a number of CDC managers in London. CDC has also carried out its own evaluation of smallholder schemes (Ellman, 1989). A literature search indicated that the literature on contract farming in Africa is not extensive, although there are two important recent collections of papers. A study edited by Little and Watts (1994) brings together a number of case studies on Sub Saharan Africa, including the substantial work undertaken by Jaffee at the World Bank on Kenyan Horticulture. Another collection of studies (Eastern Africa Economic Review, 1989) edited by Ayako and Glover, who has written extensively on contract farming, covers some additional schemes, including asparagus in Lesotho. One area which has received relatively more attention is gender issues within contract farming systems given the significant impact that agricultural diversification and commoditisation has had on the household economy and the allocation of resources within it. This is examined in Section Two.

One conclusion drawn by those writing on contract farming/outgrower schemes is that they have not been employed as extensively in Africa to stimulate increased agricultural production as they have been in Latin America and Asia. This may explain the limited literature available. A recent discussion on contract farming on the Development Finance Network (an electronic discussion group operated by the FAO) indicated a dearth of knowledge on African case studies among researchers, apart from the well documented Kenyan experience. However one contributor indicated that anecdotal evidence suggests more companies may be involved in small outgrower schemes for export shipment than is generally acknowledged. More field research is needed.

This study draws from the secondary literature reviewed as well as recent visit reports by NRI consultants to the Southern Africa region (Stringfellow, 1995; Coulter and Hindmarsh, 1995; Green, Steele and Willemse, 1995).

Section One: Factors influencing the establishment of contract farming/outgrower schemes

Techno-economic factors

If the advantages of contract farming arrangements over spot market purchases or estate production lie mainly in (i) the control that this gives firms over the flow of raw materials into their processing or marketing systems; and (ii) the access to self-exploitative rather than hired labour, it is reasonable to expect that such institutional arrangements will be found in situations where a high degree of control is required in raw material delivery and production processes are highly labour intensive. For example where raw materials must meet stringent quality criteria, are highly perishable (so delivery must be carefully co-ordinated) or require very intensive husbandry, contract farming has the potential to reduce the risk of costly delays to the firm.

Horticultural crops fall into this category: they are highly perishable, they require close co-ordination of production with processing or with fresh produce marketing, and quality is essential, providing strong incentives for commodity buyers to provide inputs and technical advice to outgrowers. In addition, the relatively high value per unit volume or weight of horticultural crops makes crop collection systems over a decentralised area cost effective.

Asparagus production and marketing in Lesotho provides an example of the influence of such techno-economic factors on institutional design (Rugege and Santho, 1989). Asparagus production is labour intensive because the plants are very sensitive to weeds, requiring careful and constant weeding and at harvest the spears have to be timed as they emerge out of the soil in the early hours of the morning. In the 1970s when the UNDP/FAO was designing an asparagus scheme for Lesotho, an outgrower operation was a preferred institutional option over estate labour. It has proved very successful.

French beans provide another example. Hortiequip, the administrative unit in Kenya for France's largest vegetable processing firm, Compagnie Saupiquet, has invested in the production of French beans under an outgrower system because of the highly intensive nature of production (Jaffee in Little and Watts, 1994). The alternative, a nucleus estate with a large labour force, was not favoured because of the high costs of supervision.

Among non-horticultural crops, cotton is often grown under contract. In non-mechanised production systems, harvesting is highly labour intensive and where climatic conditions increase susceptibility to pest and diseases, careful supervision and crop husbandry are required.

The need for careful supervision and co-ordination in production and processing recommends tea as a suitable commodity for smallholder production. In order to ensure high quality, plucking standards (two leaves and a bud) need to be maintained and the tea rapidly processed after harvest. In Kenya the Kenya Tea Development Authority has since 1964 operated a smallholder scheme which by

1984 included nearly 200,000 smallholders (Ayako et al., 1989). In Malawi the Smallholder Tea Authority had some 5,000 smallholders in 1984 (CDC database).

However there are other important examples of contract farming and outgrower schemes in Africa where techno-economic factors do not seem to have played a direct role in the institutional design of production. With regard to horticultural crops for example, the predominant institutional mode in Kenya for the production of strawberries and cut flowers has not been contract farming but large-scale vertically integrated operations, even though these crops are very labour intensive, have high perishability and require strict quality and delivery standards. By contrast sugar cane, which under an irrigated production system requires the assignment of most production and harvest tasks to the scheme management, not to smallholders, making it an obvious estate crop, is grown in several outgrower schemes in Africa. Thus though the technical and production characteristics of crops can explain to some degree the historical incidence of contract farming in Africa, other explanatory factors are required. In the following discussion, a number of these are proposed.

Access to markets

This has two aspects: the necessary physical infrastructure and transport linkages to move production to markets; and sufficient economic incentives in the form of profitable market opportunities.

A recent discussion on the FAO sponsored Development Finance Network highlighted the importance of suitable transport infrastructure in the successful development of contract farming arrangements, citing as an example the production of green beans in the Kilimanjaro region of Tanzania where there are regular flights to Europe from Kilimanjaro International Airport. But this success is also linked to the existence of a large, high value market for green beans in Europe, a factor which encouraged French investment in Kenya, as noted above. Similarly, the success of the outgrower scheme for the production of asparagus in Lesotho owes much to a strong European market which is likely to increase as traditional asparagus exporting countries show a decline in production (Taiwan) and production in Europe stagnates. In addition, Lesotho has the marketing advantage of exporting to Europe off-season (Rugege and Santho, *op.cit.*).

Identifying and accessing markets is an activity which requires well capitalised and well linked entrepreneurs willing to take advantage of new opportunities. Entering high-value export markets is a costly business which requires information on markets and on the characteristics of consumer and retail demand (i.e. quality, packaging, seasonality); on technical and marketing innovations of competitors; on tariff and non-tariff barriers and preferences; and on importing, wholesale and retail marketing channels.

Once an opportunity has been identified, the firm will face further start up costs in selecting and training growers and adapting technologies to new environments. Returning again to the example of green beans in Kenya, Hortiequip quickly encountered serious technical and organisational problems when it tried to replicate a successful outgrower scheme for green beans developed in Morocco in Kenya. The company incurred losses in the early stages as a result of poor yields and poor loan recovery. A smaller company might have gone into receivership under such pressures but with a well resourced parent company behind it, Hortiequip was able to bear the initial losses, surviving into the next season when it introduced changes to the technology package and placed stricter controls on its outgrowers, resulting in a significant improvement in the volume and quality of production (Jaffee, *op.cit.*).

In Lesotho the ability of a new project to survive through a difficult start up period owed less to the financial muscle of a parent company and more to the availability of long term project financing through donors. From the outset in the early 1970s the UNDP/FAO played a lead role in the development of the asparagus scheme in Lesotho, subsidising the cost of extension, new infrastructure and technical personnel. At the time this approach was quite acceptable and, as discussed below, many projects were financed with concessionary lines of credit in a similar way. In the changed economic climate of the mid 1990s, this seems unlikely to happen again.

The competitive environment

As well as access to markets, to operate a successful contract farming scheme a firm must be able to ensure that it has exclusive purchase of the output of its growers. Where the company has monopsony powers, this control is guaranteed. Where there is competition for procurement, the risk of leakage increases. In Kenya the Kenya Tea Development Authority, Mumias Sugar Company and British American Tobacco have had monopsony control over their targeted crop, one of the key factors behind the generally successful operation of these schemes. In Lesotho the Basotho Fruits and Vegetables Canners Ltd, the cannery set up with the assistance of the United Nations Capital Development Fund, is the sole buyer of asparagus.

Another example from Kenya, the case of Kenya Horticultural Exports (KHE) in the Matuu Yatta region, illustrates what can happen when a company doesn't have this control (Jaffee, *op.cit.*). KHE, which had a market to supply "Asian" vegetables to the UK, agreed contractual arrangements with groups of farmers in the Matuu Yatta region. The contract committed KHE to provide inputs, set up collection centres for crops, develop nurseries, and provide information on production techniques. In return the farmers were to meet purchase orders which specified types and volumes of crops to be purchased on a weekly and monthly basis, indicating prices to be paid for the entire season. But the presence of competition in the area meant that farmers were able to breach the contract and find alternative buyers who were not providing any production support and were therefore able to pay higher prices. KHE soon learnt that in the competitive trading environment that existed, contract farming arrangements were not sustainable.

The problems experienced by KHE are an indication of the fact that by the late 1970s and early 1980s the fresh horticulture market in the country had developed to such a degree that it was attracting many small scale firms who recognised that there were opportunities for trade without the need to invest in developing long term relationships with growers. Technology transfer efforts by pioneering firms had been successful: new technologies had been disseminated and a sufficient market had developed in horticultural products to allow buying companies to operate through spot purchasing and by offering immediate cash. Given this competition, more established firms like KHE found that contractual arrangements broke down as their new competitors had lower overheads and could offer higher farm gate prices.

Similar problems faced Oil Crop Development(OCD) Ltd in Kenya which discontinued contract farming arrangements for sunflower because of the difficulty encountered in policing contracts in a market in which many millers, running at considerable excess capacity, competed to buy sunflower seed. The millers were able to free ride on OCD's investment in quality seed which it had been supplying to its growers (Ayako *et.al., op cit.*)

In Zambia, the Zambia Cashew Company was not able to recoup its investment costs, both in processing facilities and in developing a new commodity in the area (investments in planting material and developing appropriate husbandry techniques), as farmers were able to sell to other companies offering higher prices because, as in the KHE case in Kenya, they didn't have to offset development costs against the price paid (Gilchrist and Wallis, 1992).

The examples illustrate that in an open economic environment firms face a serious problem of leakage which make investments in contract farming much riskier than under arrangements where competition is very limited. It is a problem which has become much more evident in Africa with the demise of parastatals and single marketing channels, which in the past allowed governments to make deductions for inputs and extension provided to outgrowers through the stop order system.

In its efforts to attract foreign investors into the cotton industry in Mozambique, the government has sought to get around this problem by offering companies monopsony powers over growers in different regions of the country, creating a regionalised single channel marketing system. The drawback is that this leaves the growers with little negotiating power vis-a vis the company, which, if the company abuses its position, could lead to a breakdown in relationships between the two sides and a disruption in production. The implications of this for the successful development of outgrower schemes will be discussed in Section Two but it is worth noting that in Uganda the government was unwilling to adopt a similar policy for the cotton sector, despite pressure from potential investors.

An alternative approach would be for governments to improve or enforce legal provisions for breach of contract. In Zambia the Agricultural Credit Act of 1995 will allow lenders to take action not only against defaulters, but against third parties who purchase pledged production. The enforcement of the new Act will require commitment and resources which may be beyond the capacity of the state, although one lender believed the law, as a deterrent to the diversion of sales, would still be effective (interview with Mr P Kangwa, ZCF Financial Services, Zambia).

Another option is for companies to agree not to undercut each other by restricting purchases to their "own" farmers. In the north of Ghana there appears to be such an agreement in operation among the seven cotton companies, creating a voluntary single channel system which has the advantage of being more flexible than a system backed by legislation.

The role of government and donor agencies

The willingness of the Mozambican government to offer to limit competition in the Mozambican cotton industry illustrates the key role that government policy continues to play in the development of contract farming and outgrower schemes.

However in the 1960s and 1970s, at a time of much greater state intervention in economic development, government did not limit itself to influencing the policy environment but was actively involved in setting up smallholder outgrower schemes, either directly or through parastatal organisations and often with the support of donors. The Commonwealth Development Corporation played a particularly important role in Sub Saharan Africa.

For example in Malawi the Smallholder Tea Authority and Smallholder Sugar Authority (established in 1967 and 1977 respectively) were statutory authorities set up by government and funded by donors and CDC. In Kenya the Kenyan Tea Authority was established in 1964 with investment capital from domestic government and external sources (CDC, World Bank, European Investment Bank and OPEC). The government also set up several sugar outgrower schemes with donor support. In Zambia, Zimbabwe, Uganda, Ghana and in the Francophone countries, state cotton parastatals, which controlled all the marketing of cotton, operated outgrower schemes. In West Africa, state parastatals in Cameroon, Cote D'Ivoire and Ghana combined estate cultivation with outgrower schemes on oil plantation schemes.

As discussed above, given the much reduced risk of leakage under a monopsonistic marketing system, the coincidence of state marketing policies and contract farming/outgrower arrangements during this period is not surprising. But government enthusiasm for outgrower schemes was based on other considerations as well. Outgrower schemes were often settlement schemes involving the clearing of previously undeveloped land and the settlement of landless people. They also represented an opportunity to link subsistence producers into the cash economy. The Swazi government was explicit in supporting outgrower schemes as a means of attaining its objective of transforming Swazi Nation farmers from subsistence to commercial farming. Other projects were intended to contribute to national self-sufficiency in staple commodities, for example the Jahaly-Pacharr irrigated rice scheme in the Gambia and the smallholder sugar projects in Malawi and Kenya. As a consequence, governments subsidised the cost of schemes and donors often invested resources on favourable terms.

Outgrower schemes also had the advantage of allowing governments to bring foreign investment into the country without requiring it to make the politically sensitive decision of granting a foreign company land rights.

In the 1980s and 1990s a shift in economic thinking away from state-led to private sector development and the dissolution of many parastatal and marketing boards means that it is unlikely that outgrower and contract farming schemes will emerge in the future as the result of government or donor investment in publicly funded and managed development schemes. The long term concessionary finance which was available in earlier years for these schemes is also disappearing. As a result all the set up and development costs in any new scheme will have to be carried by the private sector. In these circumstances the commercial viability of a scheme, rather than concern for any broader development objective, will be the main criterion on which investment decisions will be based.

However recent research in Malawi and Zambia suggests that the government and donor community still has an important role to play in the development of contract farmer/outgrower schemes. Providing traders with access to market information is one key area, both at the level of regional and international markets. Creating a conducive policy environment is another important role, including a legal framework which provides for the proper enforcement of contracts. Public investment in communication systems is another vital function. A further role for government is raising awareness to encourage participation in schemes, and education to ensure better implementation.

With regard to donors, in Zambia the European Union funded Smallholder Development Project (SDP) at Mpongwe is organising smallholder outgrowers into groups. The rationale for this is to reduce the additional costs to a company of working with many small scale, dispersed individuals, a major disincentive to working with the smallholder, by encouraging farmers to take on distribution and primary marketing functions. At Kabwe the SDP is promoting outgrower schemes by inviting traders to apply for concessionary funding to establish new schemes.

Section Three will examine the Malawi and Zambia experience in more detail, but the examples indicate the important role of governments and donors in creating an enabling environment for private enterprise.

Conclusions

Techno-economic considerations provide some explanation for the emergence of contract farming and outgrower schemes in Sub Saharan Africa since the 1960s but the influence of marketing issues (access to markets, marketing opportunities, the competitive environment) and the economic development strategies of national governments and development organisations (smallholder development strategies, settlement programmes, national food self-sufficiency), have also played a very significant role. However through the 1980s and 1990s, as national development strategies have become increasingly market led, these two influences have coincided. Thus new investments in agriculture are likely to be private sector led and the decision to employ contract farmers or outgrowers will be based on considerations of cost effectiveness and efficiency. The role of government and donors will be to provide an enabling environment for private investment.

Section Two: The determinants of successful contract farming/outgrower schemes

In an analysis of factors that appear to contribute to the success of contract farming schemes, success can be defined as the provision of mutual benefits creating an equilibrium between the interests of the company and growers. In this scenario, growers have strong incentives to supply the company at the required times and with production of sufficient volume and quality to ensure good company profits. A broader definition of success should look also at the impact of the scheme on the economic and social development of the region in which it is operating.

The factors influencing a successful outcome can be divided into two sets: internal factors to the scheme (factors over which the company and growers have control, e.g. services provided, the pricing and payments system, the choice of technology) and external ones (e.g. international prices, the macroeconomic situation, climatic factors).

Key internal issues:

(i) provision of services to outgrowers

As discussed above, the contractual relationship between growers and the company in a contract farming scheme provides the latter with the assurance that it will have access to a share of the benefits from the investments it makes in production at the farm level. The company therefore has a direct interest in providing effective extension services and adequate input services to ensure a supply of high quality, low cost produce. From the farmers' perspective, the services provided by the company may represent the only access to inputs and training advice available.

The experience of sugar schemes in Africa demonstrates a high level of company service provision. Machinery services are provided for land preparation and harvesting as well as extension services. Inputs (fertiliser, irrigation water, seed cane and pesticides) are provided on credit. Costs are deducted at source. Extension staff to farmer ratios in schemes are lower than the national average.

The availability of extension services has been key to the success of asparagus production in Lesotho, provided through the MOA and the company itself. In contract growing schemes in Swaziland more than 70% of farmers reported experiencing no problems in receiving extension advice and adequate and timely inputs to undertake production (Sithole and Boeren, 1989).

It is possible that the demand for extension officers generated by the private sector for contract grower schemes may produce a negative externality on the agricultural sector as a whole. In Lesotho some of the most experienced extension officers in the MOA have been seconded to the asparagus scheme (Rugege and Santho, *op.cit.*) and a similar situation has been reported in Kenya on the KTDA. Given the private sector's ability to pay better wages that the government, this development is of no surprise. Alternatively, the training provided to extension agents and the technological assistance transmitted to farmers might be sufficient to compensate for the loss to the public sector.

The supply of agricultural services can be financed in two ways: by the company directly, in which case the costs are deducted at source after harvest; or through credit provided by a bank at which the farmer holds an account and into which the company pays him/her at harvest directly (effectively reducing the risk of default as the bank is able to deduct the loan repayment at source). The first arrangement appears to be much more common even though it increases the working capital requirements of the company very considerably. It may also be less efficient as it involves the company, rather than the bank as a specialist financial intermediary, in the process of lending. On the other hand the reluctance of many banks to lend to the agricultural sector, and particularly to smallholders, may explain why companies are required to take on this additional expense.

Where the company is providing credit, repayment is a crucial issue. Where farmers have access to a variety of buyers, there are strong incentives to breach the contract and avoid repaying debts to the company, as noted above in Kenya. In Zambia, the management of the

Zambia Cashew Company decided to abandon its extension services in 1989 because it was not able to capture the benefits of its investments through tied procurement.

Overall, as the private sector increasingly assumes the leading role in agricultural development, the extent to which it provides service to its growers will be determined by its own estimates of the likely returns to such investments. The present behaviour of two private companies operating in the cotton sub sector in Zambia indicates that there will be no uniform approach. On the one hand Lonrho has invested considerable resources in extension services for its farmers; by contrast Cargill limits itself to procurement services.

(ii) choice of technology

A number of large outgrower schemes have been irrigation schemes, often in newly developed areas involving settlers. The advantages they bring are higher yields and greater reliability as irrigation removes the risk of crop failure which is a regular occurrence in the semi-arid areas of Africa.

By nature large irrigation schemes are capital intensive, requiring central management and they therefore have high overheads, which have to be passed back to the farmer in high fees. In the case of sugar, the economies of large-scale irrigated production and co-ordinated harvest and delivery require the assignment of most production and harvesting tasks to the scheme management. In the case of irrigated cotton and rice, irrigated production requires the farmer to be present full-time on the scheme.

Experience shows that both situations have led to problems. In Zimbabwe irrigated cotton outgrowers' schemes at Chisumbanje and Middle Sabi involved formally signed contracts, which restricted farmers' non-farm activities and required their full-time farming presence on the scheme (Jackson and Cheater, 1989). In practice farmers did not comply because they were involved in livestock husbandry and non-farm activities. Among households permanently resident in semi-arid to near desert climates a diversified household economy of this kind is a rational response to the high risk environment. By failing to take account of this and introducing a production system that required a full time farming presence, the scheme's planners were flying in the face of long established multiple income strategies.

Labour scarcity has been a major problem for the Jahaly-Pacharr irrigated rice scheme in the Gambia, which was implemented by the government in 1984 with IFAD funding, and is based on contract farming (Carney, 1994). Production on the scheme is governed by a rigid cropping schedule which requires strict adherence as any deviation would skew the demand for labour, delay planting, disrupt the watering cycle and diminish productivity. From the outset the management of the scheme and the (male) heads of household in the region expected women to provide substantial portions of the additional labour required for irrigated cultivation. Their long-standing experience in rice cultivation (lowland rice cultivation is a traditional activity for rural Gambian women) was seen as critical in easing the labour bottlenecks during the wet season. However given that the irrigated land was farmed under the control of the male household head, and therefore women could not appropriate production, the women proved very reluctant to provide their labour, especially as many had lost access to their own lowland rice lands through the project. Households were thrown into crisis as women resisted a new situation which had increased the economic power of male heads of household whilst reducing their access to resources. In households where men refused to compensate the women, the women often withdrew their labour, lowering the targeted estimates of rice production for the project and leading to a high rate of default among farmers.

In the case of sugar, an irrigated production system has the opposite effect, reducing the demand for household labour because of the need to centrally co-ordinate cultivation activities including mechanised seedbed preparation, burning of the cane and harvesting by gangs of labour which clear the cane quickly before it starts growing again. Farmers are required to irrigate, fertilise and weed the cane. The costs of the centrally provided services are deducted from the price farmers receive at harvest. If these overheads also include a component for the capital costs of the irrigation scheme itself, as they have done on a number of settlement schemes, the returns to the smallholders are even further reduced.

Ellman (*op. cit.*, 1989), in an evaluation of a number of smallholder schemes, including sugar schemes suggests that capital intensive technologies of this kind may not be in the smallholders' or the company's best interests as incentives to high productivity are reduced by the high overheads charged. Where machinery is imported, farmers are additionally exposed to foreign exchange risks which over the 1980s have been very severe in Africa. Family labour by contrast is under-utilised which, if diversification is discouraged because of the need to maximise factory throughput of the main crop (which it has been on a number of schemes), prevents the farming household from making efficient use of its most abundant factor of production. Ellman therefore argues for better use of labour intensive techniques - animal draught, diversified cropping patterns, especially for food crops, and the least possible dependence on imported technologies possible to keep down overhead costs and minimise exchange risk.

As suggested above, technical factors in the growing of irrigated cane limit the extent to which smallholders can take on more production tasks. In some schemes returns to production from irrigation have been so high because of higher yields, that farmers have accepted the capital intensive technology. For example in Swaziland farmers on the Vuvulane Irrigated Farms have found sugar cane farming to be relatively easy and profitable, reducing incentives to grow other crops. However in this case a sugar pricing formula agreed between millers and growers has allowed farmers to receive a high share of the value added by the milling sector.

These examples suggest the diversity of experience with schemes that have introduced irrigated technologies into the farming systems of smallholders. Where these have imposed production schedules that demand strict timing of work routines, changes in the way that household production is organised and in social relations have resulted. In the case of the Gambia, these changes have threatened the viability of the scheme. In Swaziland, improved income earning opportunities have compensated for the changes. The lesson is that the planning of successful schemes requires a thorough understanding of (i) the existing farming system of the smallholders who are to be involved and (ii) the intra-household economy (specifically access to and control over land and labour resources by different household members) in order to be able to predict what the impact of new technologies will be.

(iii) food crops and food security

As suggested above, a succcessful approach to designing contract farming or outgrower schemes needs to recognise the complexity of the household economy. Where food crops are an important component of the household farming system, the experience of many schemes suggests that farmers will prioritise the production of these over cash crops. For example in semi-arid areas of Ghana outgrower cotton production is attractive to farmers as it provides access through the company to fertiliser, which is otherwise beyond the means of most farmers. Both the cotton companies and the farmers themselves acknowledge that much of the fertiliser provided for cotton is used on food crops, depressing cotton yields. In response some companies are extending services to farmers to include food crops. For example Nulux Cotton Company which is based in Tamale, now provides fertiliser, pesticide and herbicide for use on farmers' maize and other food crops in addition to the inputs which are designated for use on cotton plots (Warner 1995).

Farmers on the South Nyanza Sugar Scheme in Kenya have also demonstrated a preference for a guaranteed food supply over cash income. Though the returns to labour for cane are higher than for maize, farmers have not put all their land under cane and become reliant on purchased food crops. In a survey, farmers said this was because purchased maize was not readily available and was of poor quality. A certain stigma was also attached to purchasing maize as this indicated that a farmer could not feed himself (Williams *et al*, 1989).

However in a dynamic situation cultural norms are likely to respond to the changing economic environment. Another survey in South Nyanza suggests that cane production might be accentuating gender inequalities in the household. As men, who make up the majority of outgrowers in the scheme (about 84%), see their economic status enhanced through access to cash, women, who are responsible for food crops, have less time available for food production as they are required to work on their husbands' sugar cane (Muir *et al.*, 1990). Within the household cash earned is traditionally controlled by the man and he is not required to compensate his wife for her labour. If an enhanced income status leads him to redefine what is culturally valued in terms of material objects (consumer durables etc.), he may become less concerned to meet the household's consumption needs, putting more pressure on his wife to produce cane rather than food crops. If this reduces food availability, the impact on food security for the household as a whole may be negative.

A review of existing studies on food security in the Sahel (Dione, 1990) provides a more positive view of the potential contribution of cash crops to food security. By contributing to a farmer's cash income, marketed crops can provide the required capital to develop his or her productive capacity and, as a consequence, ability to respond to prices. This may enhance self-sufficiency in grain products (through higher productivity) and spread production risk over a wider range of crops. Obviously whether these benefits are realised depends on the producer's decision to invest rather than consume cash income. The evidence of a study conducted in Mali shows that farmers engaged in cotton production do produce more cereal crops than those who grow only cereal crops (Dione, 1989).

A further explanation for this is that some cash crops have a beneficial "carry-over" effect on food production. The same study from Mali shows that large investment in cotton in the Compagnie Malienne de Textiles (CMDT) zone has brought technical improvements (animal traction, residual effects of fertiliser in crop rotations) which have contributed to increasing crop yields.

The example of the Vuvulane Irrigated Farms Scheme (discussed above) provides another positive example. Farmers have specialised in cane, growing relatively little else despite company credit and inputs for other crops. Whether this has generated intra-household conflict is not known. In other situations, local agro-climatic and market conditions may be more suitable for cash or export crops than food crops in which case there may be significant welfare gains from trade. For example sunflower in Kenya is a cash crop which grows well in marginal areas where there are few alternatives, providing farmers with a crucial source of cash income. In Lesotho, asparagus grown under the Thaba-Bosiu Rural Development Project (TBRDP), which is well suited to the restrictive climatic conditions of the country, provides outgrowers with much higher returns than food crops. There is no evidence that asparagus production has undermined food production: the company has limited outgrower plots to 0.2 ha, allowing farmers to produce food crops on the remainder of their land (the average farm size in Lesotho is 1.6 ha).

The evidence on contract farming schemes in Africa suggests that where land is fairly abundant and farmers have had the freedom to diversify their crops and income sources, food supply has been adequate. For example in Zimbabwe the experience of different tea outgrower schemes indicates that where outgrowers have been able to grow tea as one among a range of agricultural and other non-farm activities, schemes have been successful, in contrast to other schemes where rigid adherence to tea production has not worked well.

Reduction of food supply is most likely to be a problem in areas where availability of land is a constraint. Writing on the Smallholder Coffee Authority in Malawi, Ellman (*op.cit.*, 1989) observes that the emphasis placed on coffee by the Authority may not have created conflicts yet, despite the fact that families have a diversified cropping system, but an expansion of coffee planting could expose farmers to the possible negative effects of mono-cropping. The most serious of these is increased exposure to risk: where a farmer is able to offset production or marketing losses (through a fall in price) of one commodity against another, the overall risk to the household economy is much reduced. Schemes that have restricted production of non-contract crops, which have tended to be settlement schemes where considerable resources have been invested in irrigation technologies (for example cotton and sugar schemes in Zimbabwe and Kenya) have tended to encounter problems not only in food production, but in maintaining adequate levels of recruitment and participation. Therefore in designing successful schemes, the importance of paying adequate attention to the farm household's existing risk management strategies cannot be over-emphasised.

(iv) procurement and payments

It is through procurement arrangements that marketing risk between grower and firm is allocated. As firms are often trading in highly volatile export markets, the more risk they can pass on to the farmer in the form of adjustments in the price paid or the quantity purchased, the less they are exposed themselves. The firm's monopsony position vis-a vis the grower which is implied by the contract, places it in a strong position to do this. The grower of course has the opposite objective and will want to minimise the risk he or she faces by selling whatever is produced at a favourable price.

In practise, the resolution of these opposing positions is determined by (i) the availability of alternative marketing channels for growers; (ii) the availability of alternative cropping systems; (iii) government policy; (iv) the degree to which farmers can bargain collectively. Where growers can find alternative outlets for their production which offer a better price, they will do so, as the case of horticultural production in Kenya, which was discussed above demonstrates. Though this may place growers in breach of contract, there is little evidence in Africa of the enforcement of contracts because of legal inadequacies and the need for companies to maintain good public relations with farmers. If companies are not willing or able to pay a more attractive price to their growers to guarantee regular supply, their response may be to switch from a contract farming system to alternative modes of raw material supply, again as demonstrated by the Kenyan case.

Where farmers can switch production to alternative commodities they may also be able to exert pressure on the firm to minimise the risk passed on to them. Annual crops give growers this flexibility but where resources have been invested in tree crops, or where no alternative source of cash income exists, growers' options are limited.

On schemes involving public or donor funds, the government (or another public institution), often under political pressure, has sometimes used its influence to balance the interests of the growers and the company. For example in Kenya, the KTDA pays growers a fixed first payment on delivery and then a second variable annual payment based on the price of tea achieved internationally. In Cote D'Ivoire the payments system developed by the Societe Africaine de Plantations D'Heveas (SAPH) operates a price stabilisation mechanism which guarantees an attractive price to smallholders and a good return to SAPH. In 1984, the Malawi government was prepared to subsidise payments to sugar outgrowers when prices were very low and barely covered costs. In Swaziland the Swaziland Sugar Association, a parastatal representing growers and millers equally, markets all the sugar produced in the country, deducts its costs and then passes on payments to millers and growers in accordance with an agreed formula which breaks down roughly 60%/40% in favour of growers. The significance of this arrangement is that it does not treat farmers as the last group to receive a return for their effort: instead they are given a majority share of total profits accruing to the whole process of sugar production, including a share of the value added through processing.

However an effort by the Smallholder Sugar Authority in Malawi to draw up a Sale of Cane agreement with Lonhro on this basis was not successful. Lonrho wanted the government to guarantee the future price of sugar at constant 1976 level which the government was not prepared to do. The company was in effect trying to shift the price risk from the smallholder to the government but the bottom line was that it was not prepared to take it on itself (CDC database).

The likelihood of other African governments being willing to bear some of the risk of price fixing and stabilisation on behalf of private companies seems very remote given present macro-economic conditions. The position of the Mozambican government which, as discussed above, has been prepared to reduce the bargaining position of its smallholders in an effort to attract foreign capital, seems a more likely indication of the direction of government policy in the future. In these circumstances, in the absence of competitors, a company will be much freer to set the price paid to growers according to what it perceives to be in its own best interests.

(v) growers' organisations

Under these circumstances the ability of growers to bargain effectively with the company and represent their collective interests is crucial. In the schemes reviewed growers' organisations have at times played that role. For example on the asparagus project in Lesotho farmers are represented through the Setlabocha Farmers Co-operative Society which acts as their agent in dealing with the company, collecting asparagus and ensuring that it is weighed and recorded properly as well as negotiating on matters of price, bonus and asparagus quality. In the past company officials had collected, graded and weighed the crop and outgrowers had felt they were being cheated. The appointment of Co-operative officials to the board of the company has also been important in reassuring outgrowers that their interests are being taken into consideration in negotiations on price (Rugege and Santho, *op.cit,*).

In addition to representation of outgrowers, farmer organisations may provide extension services to members. On the Vuvulane Irrigated Farms project a group of farmers established a co-operative to provide inputs and machinery services for members. Lintco, the former cotton parastatal in Zambia, had an active policy of encouraging farmer groups for input delivery and marketing. In addition the company encouraged groups to take on loans on the basis of group liability. Today in Ghana extension officers with the Ghana Cotton Company are expressing a keen interest in seeing farmers' groups take on a similar role.

In general terms, greater involvement by farmers in service provision should lower costs, reducing a company's working capital requirements and the deduction made at procurement for services provided. The higher price paid as a result should also act as an incentive to farmers for increased performance. The disadvantage is that in their role as service providers, farmers' groups may be seen as serving the interest of the company as much as the interests of farmers. Especially in situations of potential conflict (for example when there is a fall in the international price of a commodity, leading to a lower price for growers) farmers may feel betrayed by their representatives if they are seen to be doing the company's work. On the other hand if the company feels that the farmers' organisation does serve its interests as well as the farmers, it may be more willing to invest resources in training executives and even the membership. This may be very important in creating effective farmers' organisations in situations where growers lack organisational experience and education. The experience of many farmers groups and co-operatives in Africa provides many examples of embezzlement and other forms of criminal activity by elected officers.

Within the Francophone cotton system the parastatals themselves have played a central role in organising farmers. An example is the Compagnie Malienne de Textiles (CMDT) which from the early 1970s has organised farmers into Associations Villageoises (AVs). Originally this was in response to a crisis created by the poor performance of input and credit suppliers who were felt by the farmers to be abusing their position (Fok, 1994). The AVs were given responsibility for the management of credit and input supplies, a move which was welcomed by the farmers. In addition to defusing a crisis, the CMDT hoped to benefit by a reduction in operating costs.

In the process of establishing groups, much emphasis was placed on creating groups with sufficient basic skills in literacy and numeracy to become viable entities in their own right. In the 1991/92 season the CMDT organised a market information system to help the AVs sell their stocks of surplus grain to the trade (Coulter and Tyler, 1993). Thus though it is clear that the CMDT's motivation in establishing the AVs was basically self-interested, farmers have gained not only from greater autonomy but also from better access to training and information.

Increasing farmer representation and responsibility on outgrower schemes may represent one managerial approach. At the other extreme at the Dwangwa Smallholder Sugar Project in Malawi a consultant commented in 1985 that the management style had always been authoritarian and the Disciplinary Committee effective, contributing to the success of the scheme (Edwards, 1985). He did add that the highly directive style might be difficult to replicate in a less disciplined society than Malawi and even within that country, in future years as farmers were better educated and had greater aspirations, such a style might no longer have a role to play. Management of the Smallholder Tea Authority in Malawi appears to have been similarly top down, with growers remaining very distant from management decision making procedures. In these circumstances it was observed that growers tended to allocate labour, land and capital to the production of tea on the basis of fatalism or trust, rather than on an evaluation of the likely returns (Cromwell, 1986).

By contrast, it is likely that group mobilisation would lead farmers to adopt a longer term view of their self-interest. Group forums would provide an opportunity for discussion and self education about the broader economic environment, allowing farmers to make better informed and more strategic decisions in relation to production and marketing.

Key external issues:

(i) prices

One important factor influencing the profitability of any outgrower scheme is the price (and price stability) of the commodity in the target market. In practise many of the schemes reviewed have been producing commodities for highly volatile markets: for example world prices for tea slumped in the late 1970s and again in the mid 1980s; sugar and cotton showed a similar trend. Even on schemes where the target market is a domestic one, lower than anticipated demand, as in the case of sugar in Malawi, combined with the country's landlocked position, restricting access to export markets, to depress prices.

Government policies to fix prices of commodities have stabilised returns in some sub sectors. An alternative is for the industry itself to operate a domestic fund for price stabilisation. The CMDT has attempted this in Mali and in Cote D'Ivoire, the payments system developed by the Societe Africaine de Plantations D'Heveas (SAPH) includes a price stabilisation mechanism which guarantees an attractive price to smallholders and a good return to SAPH.

At an international level the European Union's STABEX funds have assisted the Lome countries which have been affected by international commodity price swings. However the international lending institutions have criticised the use of national or international reserves as a means to stabilise prices, considering such efforts to be a form of subsidy which distorts factor prices. In the future therefore the availability of resources for price stabilisation is likely to diminish.

A theoretical alternative to price stabilisation is insurance. Insurance markets in African agriculture are virtually non existent, certainly at the smallholder level. In Kenya, Hortiequip has tried to introduce its own insurance system for its bean growers.

(ii) macroeconomic stability

Macroeconomic crisis and frequent devaluations have characterised the performance of many African economies in the 1980s and 1990s. Theoretically devaluation should provide improved incentives for the export sector but in practise a number of schemes have been negatively affected by the knock on effects of devaluation. Where the technology used is imported (for example machinery, fertilisers, agro-chemicals) higher costs can offset the improvement in output prices. Devaluation in 1989 hit the Zambia Cashew Company by wiping out the domestic market for cashew nuts. The poor quality of production restricted its access to the export market.

In an economic climate of such uncertainty, efforts to decrease import dependence can contribute to the ultimate success of the scheme.

(iii) climate

Cyclical droughts in many parts of Africa pose a serious threat to investment. One of the reasons asparagus has been so successful in Lesotho is its drought resistance. Even irrigation projects can be affected by unseasonal lack of rainfall as in Malawi in 1991-92 when drought affected irrigation availability on the Duwanga Sugar Scheme.

Conclusions

Price shocks, macroeconomic instability and climatic factors significantly increase the risks facing a potential investor in Sub Saharan Africa. These must be offset by the comparative advantages of investing in a given location.

Section Three: Prospects for the development of contract farming/outgrower schemes in Malawi and Zambia

Malawi

The Malawi government has been implementing a policy of agricultural market liberalisation since May 1988 through the Agricultural Marketing and Estate Development (AMED) Project under the Government's Structural Adjustment Programme. The main aims of this project are to develop a multi-channel marketing system and to improve resource utilisation by providing medium-term credit to estates. An essential component of this has been the removal of the Agricultural Development and Marketing Corporation's monopoly on export crops which had previously constrained private sector efforts to diversify out of traditional production.

The main diversification crops are soybean and paprika. Interest has also been shown in dairying, dried vegetables, sunflower, guar gum and groundnuts. A recent NRI mission for the World Bank to appraise the developmental potential of minor industrial crops in the Southern Africa Region (Green *et al.*, 1995), which selected candidate commodities on the basis of (i) known climatic suitability; (ii) potential for the entrance of a new supplier to the market; and (iii) maximising developmental impact, identified paprika, ginger, turmeric, West Indian lime oil, citronella, lemongrass, karaya gum, guar, castor oil and annatto as potential candidates for development in Malawi. Of these castor seed, guar seed, turmeric and ginger were all considered suitable for independent smallholder development. The essential oils, which are processed from the raw material, were identified as candidates for tenant farmer/outgrower schemes, as was paprika, which has a high extension requirement.

The State Agricultural Research and Extension Trust (ARET) is encouraging large agribusiness companies like Press Agriculture (part of the Press Group, the largest company in Malawi, employing some 850 permanent staff and over 20,000 people on estates) to work with estates[1] as outgrowers in the development of new crops. The company has made a strategic decision to develop new crop lines through outgrower arrangements. The belief is that by encouraging the larger estates and companies to take the initiative, a "trickle-down" effect will occur as smaller estates and smallholders adopt the new technologies as well through outgrower schemes. The market linkages formed in this way will assist smallholders in overcoming the problem of limited access to markets which the likely

---

[1] "Estate" in Malawi is a legal concept, not associated with farm size, where cultivation takes place on leasehold or freehold rather than on customary land. Regulations which restricted tobacco production to the estate sector until very recently encouraged many smallholder farmers to become registered as estates. This movement has only been constrained by the requirement that estates are a minimum size of 10 ha. There are 30,000 estates in Malawi of which 61% are between 10 and 20 ha and 88% are less than 50 ha. About 3 million people depend on the estates.

closure of subsidised ADMARC buying points under the current liberalisation programme is likely to worsen.

From an organisational perspective, there are precedents as the nucleus estate system is not new in Malawi and the established tenant system is very similar in operation to an outgrower scheme[2]. ARET itself was involved in an outgrower scheme for soybean in 1994.

However the NRI study identified a number of constraints facing potential investors in Malawi. Market information on opportunities in local and export markets among traders and processors was found to very limited. This ignorance extends to the banks which are very wary of making loans for diversification, preferring to limit their agricultural portfolio to tobacco which they know well.

Furthermore, despite the government's commitment to liberalisation, its policy in a number of areas is directly constraining investment. The restriction on Asian traders which allows them only to trade within the four main towns is a very significant barrier. The taxation system imposes a range of disincentives: the government has recently imposed a 10% export tax; a higher rate of tax is charged on outside investors and the government levies a turnover tax. On the inputs side, import duties of between 20% and 40%, a surtax of between 1% and 6% and excise duty of 10%-20%, all of which are calculated incrementally, place considerable extra costs on investors. Another restriction is the difficulty facing companies which wish to employ non-Malawi senior staff. Finally, uncertainty about government's land policy and the future of leasehold properties is a further deterrent.

The above suggests that government could do much to improve the enabling environment which has been highlighted earlier as a necessary condition for the development of successful outgrower schemes. However despite the constraints, the authors of the recent World

---

[2]A tenant in Malawi is someone who grows a crop on estate land with land, inputs and food provided by the owner of the estate. The resultant crop is sold to the estate at the end of the year and costs of inputs and food supplied are deducted. The system has been used widely for burley tobacco production but under liberalisation more progressive estate owners are now extending the arrangements to other crops.

bank study report a positive attitude among major farming companies in Malawi.

Information on the actual operation of recent outgrower schemes in Malawi is rather limited. A number of schemes reviewed during the course of this research, but these were established in the 1960s and 1970s with significant donor and government investment and management, a model which the author believes is less relevant to the present economic context. Studies of both the Smallholder Tea Authority and Smallholder Sugar Authority suggest that the style of management was not very sensitive to the needs of growers (see Section Two (v)), a factor which may have had a negative influence on the view taken by smallholders of outgrower schemes. Problems of high overhead charges (due to the choice of technology, foreign management costs and foreign denominated loans at a time of macro-economic instability)and the disruption of established farming systems (leading to inadequate food production) undermined the Dwangwa Smallholder Sugar project particularly(Edwards, *op.cit.*). On the other hand, government involvement in both schemes lead to efforts to maintain prices in the face of international price falls.

Information on more recent outgrower schemes financed by the private sector is more limited. Cheetah Limited is promoting the cultivation of paprika in Malawi where ease of integration with Burley Tobacco production, no major problems of management even by tenant farmers and fair yields make it a suitable smallholder crop. Cheetah provides seed and technical guidance to growers on the condition of sell-back of the crop. In Malawi 90% of its production is rain-fed and is grown on tenant farms. The estate acts as an intermediary between Cheetah and the farmers. Cheetah's director described this relationship as working well, given the discipline of the estate system which makes farmers less likely to sell to other buyers (in contrast to his experience with smallholders in Zambia - see below). However he fears that as the estate system breaks down under liberalisation and more buyers for paprika enter the market, discipline will break down and there will be a higher level of loan delinquency which could quickly undermine his operations. In these circumstances he would cease contracting smallholders (interview with Mark Turken, MD, Cheetah Zambia Ltd, October 1995).

No detailed information was available on the performance of the ARET soybean scheme. Other schemes are the production of guar gum by smallholders for Indian exporters based in Blantyre; production of sugar cane at Ntokohota; and production of cotton and sunflower with Lever Brothers in Southern Malawi. Little information about these schemes is available in the public domain.

Zambia

Progress towards a more diversified agricultural base is an important component of Zambian agricultural policy today in contrast to the maize monoculture promoted by the previous government in the 1980s. With an end to pan-territorial pricing for maize and the ending of direct support from government (through the state lending organisations)for input financing, producers in some areas are looking for alternative crops as well as alternative sources of input supply. Given the government's constrained access to resources to invest itself in product development, extension, marketing and input provision, it is looking increasingly to the private sector to take the lead. Outgrower schemes for smallholders are an attractive option: they should promote diversification whilst simultaneously sharing the benefits among the smallholder population, rather than confining them to a few commercial farmers. For this reason the Zambia National Farmers' Union and a number of donor programmes have given enthusiastic backing to the idea.

A number of crops are already grown under contract in Zambia involving approximately 85,000 smallholders in 1994, receiving some K 2.5 billion on credit. Of these, 69,000 were growing cotton, mainly for Lintco, the state cotton company which has now been sold to Lonrho. There are 12,500 contract farmers under the Tobacco Development Company and Kestrel Tobacco Company has 2,300 farmers.

Cheetah Zambia Ltd is operating on similar lines to its sister company in Malawi (see above). It is working with both commercial farmers and smallholders, including a project with the EU funded Smallholder Development Programme (see below).

A number of credit co-ordinators in the government's Input Distribution Programme, which provides seed and fertiliser to smallholders producing maize and which is under the private sector management of SGS and Cavmont Bank, have used outgrower arrangements to distribute the inputs. These are provided farmers on credit in return for a commitment from the farmers to sell the crop back at harvest.

The EU funded Smallholder Development Programme has also been promoting outgrower schemes. In the 1995/96 season traders wishing to establish outgrower schemes have been invited to submit proposals to the marketing credit fund in Kabwe. In Mpongwe the project is working with local entrepreneurs to assist groups of farmers diversify production. Castor bean and tobacco have been produced under an agreement with the Tobacco Association of Zambia, which is providing extension to the farmers. For groundnut production, links have been established with the Bulima Seed Growers' Association and local groundnut processing companies. Cheetah Zambia Ltd established a paprika outgrowers' scheme through a local trader involved with the project.

The EU is also financing the "New Agricultural Product Development Fund" which is targeted at farmers (with a preference for smallholders), traders and processors. It has been proposed that an initial fund of 2 million ECU be dispersed in 10 loans of between 100,000-150,000 for the development of new projects presented by potential investors to the projects's steering committee. Some 300,000 ECUs will be dispersed as research grants on new product development.

According to Green (Green *et al.*, *op.cit*, 1995) among the minor industrial crops considered in their review, paprika, turmeric and ginger, castor and bulk volume essential oils offer the best opportunities for successful diversification and potential for outgrower or smallholder development. The main constraint he identified was the lack of market knowledge among potential investors, not only for non-traditional crops but also for some more familiar crops with respect to trade potential within the region. For most potential investors, the "export market" means the international scene - especially Europe - and little awareness exists on the neighbouring market of South Africa. More information is required on the export potential of other agricultural commodities, especially to regional markets.

From the small amount of information available on the recent performance of outgrower programmes in Zambia it appears that at the institutional/operational level, the chief constraint to successful operation is the one identified earlier in this study, that of diversion of sales by smallholders. In the face of this, to maintain their operations investors need to expend considerable resources and effort in monitoring and supervision, an expense which may not be sustainable.

Penny Evans is a commercial farmer in the Mazabuka area who has been operating her own contract farming scheme with local farmers for the last 10 years. She began by buying sunflower seed from about 50 local farmers for stock feed. The popularity of the scheme among the local farming community encouraged here to extend her operations to include cotton and maize. She now has 2,941 farmers, whom she reaches through a network of agents (often village headmen) to whom she delivers inputs (fertiliser and seed) interest free in return for guaranteed crop purchase. She markets the maize through the Mazabuka Farmers Company. The sunflower is sold to a local oil processing company, High Protein Foods Ltd in Mazabouka, and the cotton to a Lonrho ginnery in Mombwa, about 230 km away. She has an arrangement with Lonrho for the supply of pesticides for cotton on credit to farmers. Repayment is deducted at source by Lonrho.

The cotton producers in the scheme tend to be the better farmers as cotton requires a greater degree of technical input. Despite this, Mrs Evans has encountered problems in running her outgrower scheme. Poverty and desperation, following a succession of droughts in the region, has led many farmers to sell their crop through another member of the family to another buyer to avoid repaying her. There is growing competition in the area among buyers, particularly from Indian traders who offer immediate cash payment for cotton. Another problem is the diversion of fertiliser away from cotton production to food crops.

High Protein Foods in Mazabuka operates its own outgrower scheme for sunflower. There are about 500 farmers in the scheme, cultivating an area of abut 2,500 ha. There are problems with repayment and some farmers sell the inputs they receive from the company rather than using them for growing the crop, but the company is committed to continuing the scheme as it believes that without it, smallholders will not be able to supply the company with oilseeds at all.

As mentioned above, a number of credit co-ordinators under the SGS/Cavmont Input Distribution including Bounty Farm Investments, BIMZI and Sable Transport, are operating outgrower schemes for the distribution of inputs. No evaluation of the performance of these schemes was possible for this study but one of these operators admitted that he had "burnt its fingers" as drought led to a high level of default. George Lloyd of Bounty Farm Investments was by contrast very enthusiastic. He had arranged to supply his farmers with inputs in return for payment in kind at harvest, rather than on credit. He also operated a scheme which allowed farmers to choose when they wanted to be paid, allowing the company to take the grain on credit. The longer the farmer was prepared to wait, the higher the price paid as the grain appreciated in value.

In Zambia most of Cheetah's contract farmers for paprika production are commercial farmers with access to irrigation. The company's principal concern is the enforcement of contracts. Whilst it remained the only buyer of paprika in the country, there were no opportunities for farmers to sell to other agents. However new buyers are now coming into the market, raising the possibility that their investment in growers will be undermined.

Efforts by the company to target smallholders in Zambia have not been very successful. Smallholders are dispersed and are not organised, pushing up the cost of input delivery and extension. The company does not have the resources or expertise to organise farmers' groups. A culture of non payment of debt among smallholders compounds this problem (Stringfellow 1995). No written evaluation has been made of Cheetah's involvement wit the Smallholder Development Programme at Mpongwe, but the company did not consider it a success. Drought and default by the trader involved created problems and only US$ 5,000 of paprika was sold. The project cost US$25 000.

Section Four: An agenda for further research

1. The development of institutional innovations

A review of secondary material and evidence from Malawi and Zambia indicates that one of the main problems facing the development of smallholder outgrower schemes in Sub Saharan Africa is the diversion of sales by producers to other buyers.

One response to this problem, which has already been tried by Bounty Investments in Zambia, is for the company to restrict its services to input provision and marketing, not credit provision as well. Thus seed and fertiliser are made available at harvest, on a barter basis. Such arrangements can be advantageous to the farmer but may constrain his cash flow, forcing him to sell when the commodity price is low. A further issue is how the farmer will finance the initial investment in a new commodity if this is not provided by the company. It is likely that this approach will work better for crops which smallholders can produce with relatively little investment in inputs or extension, for example for castor seed.

For crops where extension effort or expensive inputs are essential and have to be given in advance of harvest, companies need to develop mechanisms for obtaining some form of security from farmers if they are to provide these services on credit. Options might be a returnable deposit, a group guarantee or even a combination of the two, a group security fund. The feasibility of such arrangements should be explored in close consultation with the different parties involved.

Organising outgrowers into groups would have other effects, as outlined in Section 2 (v) above. It would improve the farmers' bargaining position vis-a-vis the company, which might not appeal to the company itself, but such groups could potentially decrease the costs of extension to the company by bringing farmers together. Input distribution and marketing costs might also be reduced if the company passed the responsibility for the distribution of inputs and bulking of produce at the primary level to groups of farmers.

Finally, the drawing up of a register of borrowers would allow companies to check the credit history of farmers applying to be included in outgrower schemes. Such a register is already under development in Zambia within the EU funded Copperbelt Smallholder Project.

2. Designing schemes which attract smallholder involvement

As well as developing sustainable institutional arrangements, an investor needs to be sure that he is promoting a commodity compatible with existing patterns of smallholder production. Gender issues, the allocation of labour, including the seasonal distribution of agricultural tasks and out migration, all need to be understood. Project appraisal should therefore include a socio-economic component.

Another issue is the high priority attached by many smallholders to the production of food over cash crops. The common diversion of fertiliser from cash crop production may require the investor to include provisions for the costs of providing inputs for food crops when assessing a project's financial feasibility.

3. Protecting the interests of farmers and scheme organisers through education, organisation and arbitration

Whilst contract farming and outgrower arrangements can introduce new economic opportunities for smallholders, they will be vulnerable to the exploitation that can result from a tied economic arrangement if isolated and with limited access to information. There is also a possibility, illustrated by examples in this report, that farmers will take a short term view of schemes in which they participate to the detriment of the scheme organisers and their own long term interests. This suggests a role for extension agencies, national farmers' organisations and other NGOs to provide farmers with information on contract farming arrangements, the rights and responsibilities of both parties involved, as well as commodity prices.

This educational task would be much facilitated by organising farmers into groups or making use of groups that already exist. This would have other advantages as discussed above.

At a national level, the establishment of an independent information and arbitration service, representing farmers' and commercial interests, might play an important role in monitoring the performance of contract farming schemes, providing advice to those wishing to set up schemes and arbitrating in the case of disputes. The case for such a service, including the issue of how it would be funded, should be investigated in further research.

4. The way forward

(i) Collaborative work with private companies and farmers

A number of recent or on-going schemes in Malawi and Zambia should be studied in order to gain an in-depth understanding of the constraints encountered and/or any successful approaches developed. Based on the findings of this work, we shall try to identify two or three companies which are interested in collaborative "action research" with NRI to develop and pilot new institutional arrangements. Participatory research with farmers will form an essential part of this process.

Recent visits to Malawi and Zambia have already provided contacts to begin this work. In Malawi Press Agriculture Ltd has already offered its collaboration. Cheetah Ltd, in Malawi and Zambia, has expressed an interest. In Zambia there may be opportunities for follow-up work with some of the maize traders establishing outgrower schemes, or companies receiving support through the EU funded programmes. The status of the credit register will also be assessed.

(ii) Developing a strategy for educating and organising farmers

The key issues are what information should be targeted at farmers, how it should be channelled and by whom. As a first step NRI will need to identify a local counterpart organisation which has a network of farmers' groups (the National Farmers' Union or other national farmers' organisation (in Zambia the National Farmers Union has already expressed interest), the Ministry of Agriculture, an NGO) and an active interest in developing contract farming. This organisation will be able to use its local knowledge to provide direction and guidance and the direct access to farmers which will be required if the research is to be a success. The case for a national information and arbitration service will also be examined during the course of this research.

(iii) The next step

Contacts will be followed up in Zambia and Malawi with a view to carrying out a three week mission to Zambia in March and, subject to approval, to Malawi in June. During the visits, efforts will be made to identify a local counterpart organisation with which to work.

References:

Ayako, A et al., "Contract Farming and Outgrower Schemes in Kenya: Case Studies" in Ayako, A and Glover, D (eds.), 1989

Ayako, A and Glover, D (eds.): Special Issue on Contract Farming and Smallholder Outgrower Schemes in Eastern and Southern Africa, Eastern Africa Economic Review, August 1989

Coulter, J and Hindmarsh, P : Crop Post Harvest Programme: Visit to Malawi, July 1995

Coulter, J and Tyler, P : Liberalisation of Cereals Marketing in Sub-Saharan Africa: Implementation Issues - Mali Case Study, NRI Report, February 1993

Cromwell, E : Evaluation of benefits, problems and constraints faced by smallholder development farmers under the Smallholders Tea Authority in Malawi, MSc Dissertation, University of Reading, 1986

Dione, J : Food security in the Sahel: Review of Existing Studies and Agenda for Future Research, Sahel Institute, Bamako, Mali, October 1990

Dione, J : "Policy dialogue, market reforms and food security in Mali and the Sahel" in Rukuni et al., Food Security Policies in the SADCC Region

Edwards, K : Dwangwa Smallholder Sugar Project: a Review of Development to 1985, CDC, 1985

Ellman, A : Review of Smallholder Agricultural Programme, Final Report, CDC, April 1989

Fok, M : L'evolution du systeme coton au Mali, Cahiers Agricultures 1994; 3: 329-36

Gill, R and Wallis, L : Zambia Cashew Company Ltd: Re-appraisal Report, CDC, August 1992

Green, C, Steele, R and Willemse, J : Minor Industrial Crops in the Southern Africa Region: An Appraisal of Developmental Potential with Special Reference to International Trade, NRI Report, 1995

Jackson, J and Cheater, A : "Contract farming: Sugar, Tea and Cotton in Zimbabwe" in Ayako and Glover, 1989

Jaffee, S : "Contract Farming in the Shadow of Competitive Markets: The Experience of Kenyan Horticulture" in Little and Watts (eds.), 1989

Little, P and Watts, M (eds.): Living Under Contract: Contract Farming and Agrarian Transformation in Sub Saharan Africa, The University of Wisconsin Press, 1994

Muir A, Woodfine A and Jenkins T : Strengthening the food production resource base of women in the South Nyanza Sugar Company commercial cane area of Kenya: the impact of cane on household subsistence and the socio-economic role of women. NRI, 1990

Rugege, S and Santho, S : "Contract Farming and Outgrower Schemes: Asparagus Production in Lesotho", in Ayako and Glover (eds.), 1989

Sithole, V and Boeren, C : "Contract Framing in Swaziland: Vuvulane Irrigated Farms and Mphetseni Settlement Scheme" in Ayako and Glover, 1989

Stringfellow, R : An assessment of agricultural market liberalisation in Zambia, the response of government, farmers and donors to the changed economic environment and the scope for farmer co-operation in improving market access, including through warehousing/ inventory credit type arrangements, NRI Report, November 1995

Warner, M : Review of Critical Changes to Farming Systems in Northern Region, Ghana (draft), Wye College, 1995

Williams I, Kendrick A, Loudon J, Ellman A : South Nyanza Sugar Company Ltd.: appraisal report. CDC, 1989