

Eastern Africa Economic Review

New Series

*Special Issue on Contract Farming and Smallholder Outgrower Schemes
in Eastern and Southern Africa*

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Department of Economics, University of Nairobi

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Dr. D.J. Glover, International Development Research Centre, Ottawa

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Eastern Africa Economic Review

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Preface

David J. Glover

*International Development Research Centre
Ottawa, Canada*

The Crisis in African Agriculture

In recent years, agricultural production in Africa has deteriorated dramatically. Per capita food production has declined in most countries over the last decade while famine has devastated many regions. In addition, earnings from agricultural exports have failed to provide the foreign exchange needed to finance essential imports and repay external debts. In short, the lack of dynamism in the agricultural sector has retarded economic development and permitted human suffering on a tragic scale.

The magnitude of the problem and the need to devise solutions are by now widely recognized. The role of research in suggesting those solutions is also widely accepted. Policy reform, particularly with respect to agricultural pricing, is frequently recommended, though little firm data is available on the aggregate supply response of African producers. While it is clear that farmers will respond to favourable prices for individual commodities, such production increases may simply represent a diversion of effort from other crops. New technologies may provide the means to increase aggregate supply, but so far the soils and climate of Africa have made the development of such technologies extremely difficult. Such problems indicate the need for a redoubling of research efforts on both policy and technology development.

Research on these two aspects is necessary but insufficient, however. Unless price signals and new technologies are effectively transmitted to producers, they will not have the desired effects. For example, high output prices may not be attractive if they are extremely volatile. Low fertilizer prices may not be effective if the inputs arrive too late for timely application or if farmers must travel long distances to obtain them. New technologies will not be adopted if farmers are not aware of them or if they must fully bear the risks of experimentation. In many cases, governments have attempted to intervene in these areas, but without consistent success. Crop insurance has suffered from unsustainably

high administrative costs and the "moral hazard" problem; agricultural extension has suffered from a lack of suitable incentives to extensionists. The design of alternative institutional frameworks could significantly enhance the effectiveness of policy reform and technological innovation in promoting agricultural growth; to date, however, this third necessary condition for development has received less attention.

Contract Farming as an Institutional Framework

One of the most promising institutional frameworks for delivering price incentives, technology and other agricultural inputs is contract farming. This system, under various names and in different forms (satellite farming, nucleus estates, outgrower schemes), involves a contractual relationship between farmers and a central processing or exporting unit. This unit can be a private firm, a public agency or a joint venture of several types; the term "firm" is used here for simplicity. In contract farming, a firm purchases produce from local farmers—which can supplement or substitute for company production. The terms of the purchase are arranged in advance through contracts, the exact nature of which varies considerably from case to case. Contracts are generally signed at planting time and specify how much produce the company will buy and what price it will pay for it. Often the firm provides credit, inputs, farm machinery rentals and technical advice, and it always retains the right to reject substandard produce.

Contracting is most commonly practised by food processing firms. Since their processing plants have high fixed costs, these firms have an interest in keeping raw material inflows at a steady level close to plant capacity. Relying on open market purchase is unlikely to achieve this. Contracts, on the other hand, can specify planting dates (and thus, indirectly, delivery dates) as well as total quantities to be delivered. The contract reduces much of the uncertainty that would exist if the company simply

bought crops on the open market, and gives it some control over the production process (for example, over the variety grown). In addition, the company does not have to invest in land, hire labour or manage large-scale farming operations which may tax the managerial capacity and technical expertise of a primarily industrial firm. There is no reason, of course, that the firm cannot use more than one method of obtaining supplies, and some firms have company farms and open market purchases in addition to contract growers.

The contract also provides certain advantages for the grower. He or she has an assured market, access to the company's services and easier access to credit. Even in cases when the firm itself does not provide loans to its growers, banks will generally accept a contract as collateral. In fact, the credit-facilitating aspect of the contract is often the farmer's principal motive for signing up.

Contract farming and outgrower schemes have become widespread in Africa and other parts of the developing world over the last ten to twenty years. Of particular importance are the schemes financed in whole or in part by the Commonwealth Development Corporation (CDC). These frequently involve both government agencies and private firms, the latter often receiving management or technical assistance contracts. A CDC/World Bank-financed tea scheme in Kenya¹ has been widely publicized and discussed as a promising model for commodity-focused projects. The US Agency for International Development (USAID) has financed many schemes in Latin America and the Asian Development Bank (ADB) has been active in this area in Asia. Private firms, foreign and domestic, have also made equity investments not connected with donor agencies. Local governments have participated in many of the schemes and in some cases governments have identified them as important elements in their rural development plans.

The reasons for this interest are fairly clear. Developing country governments are concerned about foreign ownership of land and the "enclave" nature of plantations, with their weak linkages to the rest of the economy. Contract farming seems to provide greater local involvement. Donor agencies see contract farming as a way of channeling resources to smallholders, compatible with a greater role for the private sector. More specifically, the system is attractive as a way of providing small-

holders with the services they need in order to compete with large commercial growers: credit, technical assistance, inputs, quality control and marketing. Finally, private firms may see the system as a way of shedding risk, avoiding expropriation, attracting aid funds and establishing good relations with government. This convergence of interests has led to a noticeable expansion of interest and activity in this area in recent years.

Evidence on which to base these high expectations is far from solid, however. There have been few rigorous empirical studies that would justify contract farming as the panacea some claim it to be.² Furthermore, insufficient attention has been paid to the possible problems contract farming may pose for smallholders or to its possible limitations.

Contract farming generally involves some form of monopsony, in which a single firm deals with a multitude of usually unorganized farmers. This can lead to an imbalance in bargaining power and in the distribution of benefits among the actors involved. Contract farming schemes have generally concentrated on the production of relatively high-value commodities for export, rather than basic foods for local consumption. Public outgrower schemes like the Kenya Tea Development Authority (KTDA) have provided effective technical assistance to growers, but have counted on very high ratios of extensionists to farmers to do so. Co-ordinating the delivery of services and produce involving a large number of small-scale farmers is also extremely management-intensive, raising questions about the replicability of such schemes. Finally, many outgrower projects in Africa began as settlement schemes, whose relationship with traditional tenure systems has frequently been problematic.

The Special Issue

This special issue of the *Eastern Africa Economic Review* is the result of a comparative research programme carried out in seven countries in East and Southern Africa between 1986 and 1988. The programme responded to the perceived gap in the literature and consisted of case studies of some eighteen contract farming and outgrower schemes in the region. The papers in this volume were presented at a conference held in Harare, Zimbabwe in October 1988 attended by academics, policy-makers, investors and project managers.

Table 1: Network Case Studies

Countries	Sugar	Tea	Cotton	Non-traditional ^b
Kenya	X ^a	X ^a		X
Tanzania	X	X		
Malawi	X	X		
Zambia	X		X	
Zimbabwe	X	X	X	
Swaziland			X	X
Lesotho				X

a. From secondary data
b. Such as fruits, vegetables, oilseeds and pineapple.

The purpose of the programme was to identify those factors which have led to different outcomes in terms of grower welfare. Existing research in Africa and elsewhere indicated a wide diversity of experiences, from cases in which farmers have benefited substantially in terms of income and improved farming skills to those in which growers appear to have been severely exploited by firms. The reasons behind the variations were unclear, however. An underlying assumption of the research programme was that three factors are of paramount importance:

- the nature of the crop and the market in which it is sold
- the specific form which contract farming takes (e.g., contract terms, the involvement of growers' organizations, the participation of private/public/donor agencies)
- the policy context in which the scheme is situated

The sample of cases selected for study was made in such a way that each of these variables could be held constant and the factors which determine different outcome identified. The cases described in these papers are shown in Table 1.

The papers highlight the wide variety of organizational forms which contract farming and out-grower schemes have taken in the region. These

variations in form and in the social and policy context in which the schemes operate have at times made comparative analysis difficult. It has also been difficult to summarize the wealth of detailed information available on each scheme in these short papers; the reader is referred to more extensive country studies available from the authors for more detail. In spite of these shortcomings, we believe the papers fill an important gap in the literature; we hope that they are useful in their own right and will also serve to stimulate further interest in this phenomenon, in Africa and elsewhere.

The authors would like to express their appreciation to the many people whose support and advice were instrumental in the success of the project. These include the farmers, project managers and policy-makers who generously contributed their time in the research process; the scholars from outside the region who offered the benefit of their experience in preparatory meetings; and all those involved in the preparation of the conference and this special issue of the *Review*. The financial support of the International Development Research Centre is gratefully acknowledged.

Notes

1. G. Lamb and L. Muller, *Control, Accountability and Incentives in a Successful Development Institution*, World Bank Working Paper 550 (Washington, DC: World Bank, 1982).
2. S. William and R. Karen, *Agribusiness and the Small Scale Farmer* (Boulder, CO: Westview Press, 1985).

Contract Farming and Outgrower Schemes in Kenya: Case Studies

A.B. Ayako

*Department of Economics
University of Nairobi*

D.M. Makanda

*Institute of Development Studies
University of Nairobi*

L.M. Awiti

*Department of Economics
University of Nairobi*

Okech-Owiti

*Faculty of Law
University of Nairobi*

G.M Mwabu

*Department of Business Education
Kenyatta University*

Abstract

This paper presents results of five case studies of smallholder outgrower schemes in Kenya based on primary and secondary data. Basic description, performance and impact, and problems, constraints and prospects for a scheme are presented in each case study. None of the schemes examined was an unqualified success or without problems, constraints and prospects.

Introduction

Definition and forms of contract farming

Contract farming is a production system where smallholders or large-scale farmers (owner-cultivators) enter into a formal or informal production and sale agreement (contract) with agro-industrial corporations. The contract often specifies that technological know-how and various outgrowers' agricultural support services will be provided to the farmers including the inputs, credit, machinery rentals, extension services, and general infrastructure. The contract also includes provisions regarding terms of sale of output; distribution of production and marketing risks; maintaining price levels; and mechanisms for arbitrating breach or termination of contract by either party. Existing large-scale smallholder contract farming schemes tend to be commodity-specific.

Ownership of the corporations may be wholly public, wholly private or joint public and private, and they are often set up with concessional funding from international development agencies. In mixed economies, both public and private contract farming schemes exist. Public contract farming schemes dominate the smallholder agricultural sub-sectors of many developing countries. These schemes comprise a smallholder service, small-scale farmer

settlement and nucleus estate/smallholder outgrower schemes.

The main component of the service schemes is an authority to encourage and enable smallholders to grow a particular crop through providing efficient support services and inputs. In the small-farmers settlement schemes, small-scale farmers move or are moved to holdings allocated for them in a discrete settlement area, which may be newly developed or may be an acquired plantation. They produce crops which are marketed through a central settlement authority which also provides other support services including extension and research.

In the nucleus estate/smallholder outgrower schemes, smallholders are encouraged to grow a particular crop under contract to supplement output from a nucleus estate. The nucleus estate of a scheme authority or firm then provides the farmers with a variety of support services.

Contract farming schemes in Kenya

Contract farming is a post-independence phenomenon in Kenya. At present the country is characterized by both large-scale and smallholder contract farming schemes. Medium to large-scale schemes are found for poultry (BAT Ltd.), malting barley (Kenya Breweries Ltd.), sunflower and rape seed (Oil Crop Development Ltd.—OCD) and horticulture (Hortiequip Ltd., Kenya Orchards Ltd.,

Table 1: Smallholder Contract Farming in Kenya

Crop	Farm	Farmers (no.)
Tea	KTDS	150,500
Sugar	MSC, others	35,000
Oilseeds	OCD, UFUTA	34,000
Horticulture	Njoro Cannery, others	12,000
Tobacco	BAT	10,000
Total		251,000

Source: S. Jaffee, SARSA, Working Paper No. 7.

etc). The focus of contract farming schemes, however, is the small farm sub-sector of the economy. Here, it has been significant in tea, sugar, tobacco, sunflower seed, French beans and other horticultural crops (Table 1).

Approximately 16 per cent of the 1.5 million smallholders in country produce under contract farming. At present, contract farming accounts for about 40 per cent of tea, 50 per cent of sugarcane and 80 per cent of tobacco production in Kenya.¹ A majority of the schemes are linked to a processing firm. Many firms are joint venture investments involving private management and Kenya Government equity participation. However, many schemes feature participation of a European multinational company, either as owner-manager of the scheme or through management and marketing contracts with locally-owned firms. The tea and sugar schemes are almost wholly public schemes. All but the sugarcane scheme involve a nucleus estate.

Data type and sources

Each of the following case studies provides a basic description of the scheme; its performance and impact and its problems, constraints and prospects for expansion. The sugarcane, tea and sunflower case studies are based largely on secondary data, while the remainder of the case studies are based on both secondary and primary data. Primary data for these case studies was obtained from interviews with scheme management and extension staff and a random sample of farmers. A proportional random sample of 50 of the current tobacco scheme outgrowers in the Siakago Division of Embu, 29 out of 33 past sweetcorn scheme outgrowers in Mua Hills of Machakos and 50 current, 10 past and 10 pre-selected French beans outgrowers in Vihiga Division of Kakamega were interviewed by the principal researchers using a ques-

tionnaire. The sample surveys were conducted between March 1987 and May 1988.

The Case of Sugarcane

Basic description

Sugarcane outgrower schemes in Kenya date back to the 1920s. At present there are two private and five public sugarcane outgrower schemes. The private schemes are Miwani, begun in 1922, and Ramisi (1937), while the public schemes are the East African Sugar Industries Limited of Muhoroni (1976), the Chemelil Sugar Company at Chemelil (1968), the Mumias Sugar Company at Mumias (1973), Nzoia Sugar Company in Bungoma (1978) and the South Nyanza (Sony) Sugar Company at Awendo (1981). The phenomenal growth in public sugarcane outgrower schemes during the 1967-81 period was justified to achieve domestic self-sufficiency in sugar, create wage employment in the rural areas, create further sources of income for farmers and create import-saving industry.

All the public schemes are managed privately by either the Mehta Group International of India (Muhoroni) or Booker and Tate of London (Mumias and Awendo). Establishment of some of the schemes (Awendo and Bungoma) entailed displacing people to create room for nucleus estates. The schemes are located almost entirely in Western Kenya which accounts for 98 per cent of total cane production; the remaining 2 per cent of output being produced at Ramisi in Coast Province.² Smallholder sugarcane outgrower schemes accounted for about 78 per cent of total cane acreage in the country in 1984.

Only the Mumias, Bungoma and Awendo smallholder outgrower schemes are based strictly on contract farming. Each of these scheme comprise a factory complex and its supporting plantations (nucleus estate) at the centre, and contracted

smallholder outgrowers (with an average size of less than 20 hectares) within a 32-kilometre periphery. Nucleus estates are owned and managed by millers and are highly mechanized. The justification for establishing nucleus estates in Kenya's major sugar factories was based on an *a priori* assumption that outgrowers would not guarantee a continuous flow of cane to the factory. Hence, the estates provide a buffer against the risk of inadequate cane supplies from the outgrowers to meet the factory requirements. These account for roughly 25 per cent of the total cane supply to the sugar industry.

An interested smallholder sugarcane outgrower enters into a contract of at least a five-year duration (necessary to complete one seed cane crop and two ratoon crops), which specifies access to technological know-how, company (miller's) intervention at any stage of production, sale of cane output, distribution of production and marketing risks and termination of contract by either party. The contract restricts farmers to the miller's production know-how through selected inputs and extension services. The cane contracts provide for the miller to intervene at any stage of production to maintain quality—at the expense of the farmer.

The contract also obliges the farmer to sell his cane to the contracting miller. This is effected through zoning laws. However, the contract does not explicitly oblige the miller to buy all cane from the farmer. In terms of distribution of risks, the contract transfers greater risk-bearing to the outgrowers—such as risks of bad weather and arson. Furthermore, the contract does not guarantee farmers a minimum price of cane output, implying a price risk to them. However, this is minimized through government control of cane prices.

In all the schemes, contracted farmers receive both credit and extension services. Credit is paid in-kind, in seed-cane, fertilizers, pesticides, land preparation and harvesting machinery, and transport services. Interest is charged on the credit. Only in the Mumias scheme is credit administered by an outgrowers organization rather than the miller. In all cases, however, inputs credit recovery is tied to cane output.

Harvested cane is weighed in the presence of the farmers or their representatives and issued with a weighing machine printout. The records are also sent to the relevant outgrowers' organization. Payment is made net of inputs, loans, interest and charges by outgrower organizations. Loan recovery is phased over the plant and ratoon crops on a sliding scale. Average net returns per farmer for the

first crop and ratoon crops varies significantly from one scheme to another. In 1988 it was estimated at about KSh 20,000 per hectare for the plant crop and at between KSh 14,000 per hectare and KSh 20,000 per hectare for Mumias'.³ Farmers are paid with some delays due to the separation of production and marketing functions of sugar. At present, millers only produce sugar while the Ministry of Commerce, through the Kenya National Trading Corporation (KNTC), markets it.

At the initial stages, the millers dealt with contracted farmers individually. In time, however, the complexity and the costs of relating to large numbers of outgrowers individually have forced millers to encourage formation of outgrower organizations to represent farmers in scheme policies and their implementation. These take the form of outgrowers companies (in Mumias and Awendo) and outgrowers co-operative unions (in Bungoma). Their performance, however, is controversial.

Due to problems of continuity of research staff in individual companies and possible conflicts of interest, there is a central sugarcane research station based at Kibos. At present, the research activities of the station are being conducted through the Kenya Agricultural Research Institute (KARI). Scheme management would, however, prefer to finance and manage the research on sugarcane themselves.

Performance and impact

Kenya's sugar industry provides interesting cases of success and failure during the post-independence period. The objective of self-sufficiency in sugar is part of the broader national objective of food self-sufficiency, spelt out in Sessional Paper No. 4 of 1981 on national food policy. Production of sugar increased from about 35,000 tonnes a year in the 1960s to 413,000 tonnes in 1987.⁴ On the other hand, consumption of sugar increased from 100,000 tonnes in the 1963-64 period to approximately 396,000 tonnes during 1987. Sugar self-sufficiency was only achieved in 1979 and 1983.

The sugar industry plays an important role in the Kenyan economy—both saving foreign exchange and employing a part of Kenya's labour force. Furthermore, since 1976, the industry pays into the exchequer KSh 1,000 in the form of excise duty for every tonne of sugar produced. The industry also provides a means of livelihood to small farmers and employees in the industry. The development of the sugar industry has, therefore, yielded socio-economic benefits in terms of employment and rural development.

Other benefits from the sugar industry have

been derived from the use of its by-products: molasses and bagasse. Molasses is used for the extraction of ethanol; an ingredient in fuel (gasohol) and alcohol (gin) production. The bagasse (waste product in the extraction of fibrous stems from cane) are used as fuel in sugar factories to heat boilers and generate steam and electricity.

Problems, constraints and prospects

One problem of the schemes that could affect their continued viability appears to be the nature of the contracts used. The contracts transfer greater production and market risk to the outgrowers. The kind of inequitable distribution of risks minimizes outgrowers' expected returns from the scheme. This, however, has not resulted in a significant turnover rate among scheme outgrowers. Delayed payments, harvest and heavy deductions for inputs and services have not lead to a significant turnover rate among scheme outgrowers, either. Delayed payments which undermine the key attraction of contract farming—market security—have been attributed to the separation of the production and marketing functions.

Delays in cane harvesting are costly to both outgrowers (in terms of opportunity cost of tied-up land) and millers (in terms of loss of sugar content). Delays have been attributed to several factors, including harvesting and milling machinery breakdowns. Some growers, especially in the Nyanza sugar belt, burn their cane to attract early harvesting. Burnt cane must be harvested immediately thereby causing costly interruption in the cane harvest schedule. Penalties are imposed on farmers who burn their cane.

The Case of Sunflower

Basic description

The sunflower outgrowers scheme was started in 1982 by Oil Crop Development (OCD) Ltd., a subsidiary of East Africa Industries (EAI) Ltd. At its inception the scheme was based on contract farming and consisted of 80 per cent large-scale and 20 per cent smallholder outgrower farmers.⁵ However, since the 1985/86 crop season the ratio appears to have reversed and the smallholder subscheme is no longer based on contract farming. OCD discontinued contract farming in sunflower due to the difficulty of policing contracts given the non-monopsonistic nature of the sunflower seed market. The market is characterized by many millers running at considerable excess capacity. These tended to free ride on OCD's investment costs on

quality seed by poaching it. At present, the sunflower scheme is based on OCD appointed agents in the production areas acting as middlemen who distribute and purchase sunflower seed.

Currently, smallholder outgrowers account for about 90 per cent of total sunflower production in the country from about 20,000 acres.⁶ There are about 70,000 smallholder sunflower outgrowers distributed throughout the country in the marginal areas of Central Province (7,000 outgrowers), Rift Valley Province (9,000 outgrowers), Western Province (14,000 outgrowers), Eastern Province (28,000 outgrowers), and Nyanza Province (12,000 outgrowers). The recent preference for smallholder over large-scale outgrowers has been attributed to insufficient commitment to the sunflower crop by large-scale farmers, high service costs, under-recovery of expenditure incurred on large farms, absenteeism of large-scale farmers and better farm practices, especially crop rotation, in smallholdings.

The agents do not have any clear selection criteria for scheme outgrowers. Any person interested in growing sunflower simply approaches the local OCD agent and receives seeds. The supply of fertilizer and other chemicals to farmers on credit was discontinued in 1985 due to difficulty of loan recovery. The company does provide limited extension services to farmers in liaison with staff from the Ministry of Agriculture.

Agent also purchase produce, earning a commission of 20 cents per kilogram of output purchased. The farmer is paid KSh 2.80 per kilogram of output delivered. Appointed local transporters transport both seed and produce. OCD sells 75 per cent of the processed oil to EAI and 25 per cent of it to other users.

There is no official arrangement between OCD and government institutions requiring consultation or reporting. The company organizes its projects and activities independently of the Ministry of Agriculture and is under no obligation to consult with, or refer any matter to, the Ministry. It deals directly with the farmers and determines the conditions for such dealing. Whatever liaison there is, it is entirely voluntary on the part of the company, being necessitated essentially by the company's requirements.

Performance and impact

Sunflower growing has been a major economic boost to the local economy of the marginal areas of Kenya in a number of ways. First, it provides employment directly to about 70,000 small-scale farmers and their families in these areas. Second,

sunflower production provides substantial incomes not only to outgrowers but also to buying agents and local transporters. In 1986, some KSh 94.5 million was earned from about 30,000 tonnes of sunflower seed of which the marginal areas of Meru District alone earned KSh 23.4 million.⁷ The cash comes at the season when farmers are buying agricultural inputs for the short rains and sending their children to school for their second and third terms. Third, since sunflower is a cash crop for the marginal areas of the country, it has provided an opportunity for equitable distribution of wealth and rural development. Small-scale farmers in these areas often lack an alternative cash crop. Finally, sunflower production has contributed about 20,000 tonnes of high quality vegetable oil for domestic consumption, thus saving the country foreign exchange amounting to more than KSh 100 million and some KSh 12 million in oilseed cake for the animal industry. By 1995/96 the country is expected to achieve about 40 per cent self-sufficiency (or saving of about K£ 20 million) and self-sufficiency in domestic cake requirements.

Problems, constraints and opportunities

Expansion of the sunflower scheme is favoured by a number of factors including suitable climate conditions, the highest yield per hectare of all oil crops except oilseed rape, its high oil content, its suitability for crop rotation (rotates well with cereals, especially maize and wheat), its annuity, suitability to the country's bi-modal rainfall regime (it can be grown both during the long and short rains), and its fast maturity compared to other oil crops thereby giving "fast cash" to many small-scale farmers.

However, expansion of sunflower production in the country has been constrained by low returns due to low international and domestic market prices. Available information shows that sunflower is not as profitable in high potential areas as in marginal areas. Thus, expansion of production would be limited to the marginal parts of the country. Furthermore, the lower prices of imported oil fats reduces the demand for vegetable oils, limiting expansion of its production further.

The Case of Tobacco

Basic description

While the history of flue-cured tobacco production in Kenya can be traced to the 1930s (in Sagana and Kitui) and 1950s (at Ena near Embu), tobacco

production did not begin in earnest until 1975. Prior to 1975 most leaf for Kenyan cigarette and pipe tobacco manufacture was imported from Uganda and Tanzania. The deteriorating political situation within the East African Community provided the environment for the development of a tobacco production scheme in Kenya. The tobacco scheme is a smallholder outgrower scheme based on contract farming. It is operated and managed by British American Tobacco (K) Ltd. (BAT), a locally-incorporated transnational with 40 per cent local and 60 per cent foreign ownership. The Kenya Government has only a 20 per cent equity participation role. Thus the company is privately-managed and organizes its projects and activities independently of government agencies (such as the Ministry of Agriculture).

In 1987, there were about 11,000 smallholder outgrowers in the BAT scheme. These produced about 7 million kilograms of green leaf tobacco from 5,000 hectares.⁸ The total number of farmers, crop area and output are, however, distributed unevenly among the three types of tobacco produced in the scheme. These are flue-cured tobacco (Bungoma/Busia, South Nyanza and Meru areas), fire-cured tobacco (South Nyanza) and burley tobacco (South Nyanza). In 1987, about 3,500 farmers produced about 2 million kilograms of fire-cured tobacco from about 1,600 hectares, and some 7,000 farmers produced about 5 million kilograms of flue-cured tobacco from about 4,000 hectares, and 100 farmers produced 1 million kilograms of burley tobacco from 50 hectares.

The scheme is organized on the concept of "production centres". These serve as bases for supplying both production materials and agricultural extension services and act as buying centres for purchasing cured leaf. The main production centres are located at Malakisi in Bungoma, Mitunguu in Meru, Siakago in Embu, Oyani, Rongo and Kuria in South Nyanza, and Kitui.

There are two types of farmers contracted by the company in the production areas: society and direct scheme outgrowers. These co-exist only in the traditional production areas of Kitui and Embu. The majority of the contracted farmers are the direct scheme outgrowers. There are only three tobacco co-operative societies which together produce 500 tonnes of leaf worth KSh 7.7 million annually.⁹ Most registered farmers are women although they have no title to land. This is attributed to women being more available on the farms than their husbands.

The scheme's management extends in-kind

credit to the registered farmers, such as seedlings, fertilizers and other necessary inputs such as sisal twine, bags, flow pipes and iron sheets, transport and extension services. The only thing the society farmers are supplied directly by the company is extension services. The other inputs are supplied to the society which, in turn, distributes them to its members according to internal rules. The company only supervises the ploughing, planting, weeding and curing activities of the farmer. This has the advantage of minimizing the cost deducted from the farmers' proceeds and increasing their production skills.

Once the grade of the delivered output has been determined at the collection centre, payment is made on the spot to both direct and society farmers. Payment is net of company loans advanced. Loan recovery is limited to 50 per cent of every sale until fully recovered. Society farmers are generally paid with delays and additional deductions. Average returns to farmers from tobacco is about KSh 8,500 per annum.¹⁰ Producer and consumer prices of tobacco are unrelated due to the existence of excise duty and sales tax. Excise tax on tobacco products is 68 per cent. The producer price of green leaf tobacco is also controlled to maintain profitability balance among crops.

Quantity and quality controls in the scheme are achieved through acreage restrictions per farmer and deployment of well-trained extension officers who work closely with the farmers at every stage of production. The average acreage prescribed per producer is 0.5 hectares (1.25 acres) from which between 300-500 kilograms of tobacco is expected.¹¹ The acreage restriction is not very effective with society farmers.

Farmers have no formal representation in the scheme's policy and its implementation. However, at the division level farmers elect a few *ad hoc* representatives who present their grievances to the local managers for solutions or onward transmission to the senior management staff in Nairobi. The direct scheme outgrowers appear reluctant to form an outgrowers' organization. The reluctance is explained by the performance of existing tobacco co-operative societies which both delay and reduce payments to the farmers. The scheme management also seems happy with the present situation in view of the high potential for disruptive politicization of such organizations, in evidence at some existing tobacco co-operative societies.

Performance and impact

In 1988, the total number of people directly or

indirectly deriving income from the tobacco scheme was estimated at 600,000.¹² This includes scheme employees, farmers, dealers, stockists, retailers and transporters. An additional 1,000 casual workers earned income from re-handling and sorting green leaf tobacco for export.

The tobacco scheme has saved significant amounts of foreign exchange. The scheme saved the country a total of KSh 110.5 million in foreign exchange in 1982. The initial objective of the scheme of domestic self-sufficiency in green leaf tobacco was achieved in 1982, limiting further expansion in production. The scheme management then explored possibilities of exporting green leaf tobacco to Europe. In 1983, it exported 153 tonnes of fire-cured tobacco to the UK, Holland and Germany. In 1987, it exported 450 tonnes of leaf (worth KSh 76.5 million) and plans to export 600 tonnes of leaf in 1988. The scheme management also exports manufactured cigarettes to neighbouring countries.

Farmers in the scheme are encouraged to grow enough trees to be self-sufficient in their woodfuel requirements. Afforestation is a key element of the contract the farmers sign with the company. The scheme had contributed about 13.5 million trees in the country by 1987. Growing trees helps to conserve soil in the production areas. The scheme management also encourages soil conservation through making ridges, grass and tree wind-breaks.

Tobacco production has been a major boost to household income in the production areas. Most outgrowers express satisfaction with their returns from tobacco production. Indeed, the initial expectations of many of the outgrowers appear to have been exceeded. The proceeds from tobacco helps them to pay school fees, build good houses and feed and clothe their families. The average annual income from tobacco production is estimated at about KSh 8,500 per annum. The scheme provides employment for both the farm family and the community.

Due to the restricted acreage allowed in production per farmer and the average landholding size in the production areas, it would appear that tobacco production has not affected household food self-sufficiency. Indeed, land appears to be the least significant factor in explaining household food shortfalls from one season to another in these areas. Tobacco production may, however, have compromised household food security indirectly through its competition for scarce family labour. It should be noted, however, that income from tobacco is used to meet household goods shortfalls.

The scheme management operates a research

station based at Malakisi in Bungoma. The station conducts research on woodfuel usage, tobacco diseases and seed multiplication rate. Information generated there is passed on to outgrowers through scheme extension staff.

Problems, constraints and opportunities

Defaulting on loans made for inputs is attributed to natural calamities such as drought and hailstorms and poor crop husbandry. However, the incidence of such cases is limited due to the scheme's effective extension services. Consequences of defaulting include stopping further company loans and/or growing of the crop. Again, incidences of these were low. No legal action has been taken to recover overdue loans. This was explained by high legal fees, good public relations with the farmers and legal inadequacies of the contracts signed.

Having achieved domestic self-sufficiency in green leaf tobacco the scheme now depends on export markets if it is to expand. Negative worldwide campaigns against smoking seem to depress the market, thereby reducing the opportunities for export. Introduction of the Preferential Trade Area (PTA), however, offers prospects for expanded tobacco production by expanding regional markets for tobacco.

The Case of Tea

Basic description

Smallholder tea outgrower schemes in Kenya were first introduced in the Swynnerton Plan of 1954. Prior to this, all tea production in Kenya was based on plantation (estate) schemes. Kenya's land policy at independence only limited expansion of the estate schemes, explaining their present co-existence with the smallholder outgrower schemes. In June 1984 there were 199,555 tea smallholder outgrowers growing 56,173 hectares of tea, with an average of about 0.38 hectares per farmer.¹³ The scheme has been operated and managed by the Kenya Tea Development Authority (KTDA), a parastatal, since January 1964. KTDA, a predecessor of the Special Crops Development Authority (SCDA), is privately managed and enjoys both operational and technological autonomy. Its investment capital, especially for construction of factories, is derived from both external sources (CDC, World Bank, European Investment Bank and OPEC) and domestic sources (Kenya Government and financial parastatal corporations). Its operational costs are met from a cess deducted monthly from

the monthly payment to the farmers for their green leaf.

There appear to be no formal contracts signed between the Authority and the smallholder tea outgrower farmers. The Authority registers pre-selected farmers and issues them with tea plants and other necessary inputs on credit. It closely monitors all stages of tea production to guarantee high quality tea. The KTDA takes charge of planting programmes, field operations, inspection, collection, purchase and transportation. Senior extension and headquarters staff make periodic visits to assess their problems and the progress of outgrowers. Originally, the activities of the Authority were limited to extension and leaf production. However, since the late 1960s it has started to process its own tea. It now operates thirty-nine factories which it has built or bought from private companies.

The Authority makes two payments to outgrowers for output delivered. The first is a fixed payment based on the weight of green leaf (per kilogram) collected while the second is a variable annual payment based on the price achieved by the "made" (manufactured) tea internationally. Payments are net of cost of fertilizers and other inputs supplied by the Authority. A charge is also levied on growers as a down payment for tea stumps, and credit is carefully controlled in order to strengthen the Authority's power to regulate the selection of growers and the acreage on which farmers can plant tea. An additional incentive to outgrowers in the scheme is the ownership of shares in individual KTDA tea factories which earn them dividends. About 15,000 farmers, approximately 10 per cent of all outgrowers, currently own some 1.6 million shares in the early sixteen tea factories incorporated as public companies.¹⁴ Payment of dividends on these shares is limited until factory loan obligations are met.

KTDA has, since its inception, encouraged farmers to participate in scheme policy decisions and their implementation. The elected Divisional and District Tea Committees, the Provisional Tea Boards and farmers' representatives on the KTDA Board itself comprise the formal institutional channel for advising the tea land allocation process, transmitting KTDA policy information and for forwarding grievances.

Performance and impact

The scheme is considered to be the largest and most successful smallholder tea scheme in the world. The scheme has contributed significantly to Kenya's smallholder tea output. This has increased from a mere 1,200 metric tonnes in 1965 to over 30,000

tonnes in 1979/80. Smallholder tea area and the number of farmers has expanded steadily under the Authority's successive planting plans. In spite of rapid expansion, the operating costs of the scheme have been maintained over the years. Once the basic organizational structures were securely in place, the scheme's cost per grower and per hectare began to fall sharply in real terms.

Comprehensive information on the socio-economic effects of tea development on smallholder farmers is generally lacking. However, tea districts appear economically buoyant compared to the remainder of rural Kenya. The success of the smallholder tea scheme has been attributed to a number of factors including institutional features, such as efficient management structure, operational and technological autonomy, favourable incentive schemes and prompt payment of farmers,¹⁵ favourable market conditions for tea and grower participation.¹⁶

Problems, constraints and prospects

Difficulty in supervising to maintain plucking standards (two leaves and a bud) and the high cost of servicing loans constrain expansion of the smallholder tea scheme. To ensure strict plucking standards the average size of holdings is restricted to one hectare. This has been achieved in most production areas. The cost of servicing loans (75 per cent of which are denominated in foreign currency) for the construction of factories has been a major financial burden on the scheme, especially during the 1981-82 recession.

The Case of Sweetcorn

Basic description

The sweetcorn scheme is a private smallholder scheme based on contract farming. It was started by Kenya Orchards Limited (KOL), a local private company, in 1979. The scheme is located in Mua Hills, Machakos District. Introduction of the scheme was justified on many grounds, including availability of a crop near the factory, a source for imported sweetcorn seed and need for extension services in crop production. Previously the company purchased sweetcorn from private commercial farmers at Athi River, 40 kilometres away. Farmers around Mua Hills could not import the seed and needed extension services to grow it.

The scheme management recruits prospective farmers using its extension staff and the local administration. These farmers sign a contract with the company which specifies the quality and variety

of seed that the farmer will be provided with. Farmers who have signed the contract are supplied with free seed. The contract also specifies that the farmer has been given full instructions as to the sowing time, planting procedure, manure/fertilizer application rates and the pests and diseases and their control measures. The contract obliges the farmers to sell the yield to KOL and requires KOL to pay the farmer a specified price per quantity delivered. The price of KSh 1.00 per kilogram for the sweet corn on the cob has prevailed since 1979. The purchase is on cash terms at pre-selected buying centres.

The sweetcorn crop takes approximately three months to mature. The contract specifies the time when the farmer is supposed to take the corn to the factory but does not specify whether KOL is obliged to buy all of the farmer's produce. Nor does it specify what should be done in case KOL or the farmer fails to honour the contract because of natural calamities or administrative bottlenecks. The distribution of risks in the contract, therefore, appears uncertain.

A majority of farmers in the scheme are ignorant of both the contents and implications of the contracts they have signed. Very few farmers seem to know what to do in case the company breaches the contract. In the absence of an outgrowers organization, farmers' grievances are channeled through the local leadership—which is often accused of colluding with the company management.

Land devoted to sweetcorn ranges between 0.2 acres and 3 acres with a mean of 0.9 acres. The mean acreage of land devoted to crops in the study area is 6.9 acres. Sweetcorn occupies only 13 per cent of the total area under crops or 3.8 per cent of total land holding.

Performance and impact

The KOL sweetcorn scheme appears to have failed. Out of thirty-three farmers contracted between 1979 and 1982, only two continued to grow the crop by the time of our survey in 1987. The high farmer quit rate from the scheme has been attributed to low returns from sweetcorn sales. The average net income from sweetcorn is approximately KSh 200 per acre (KSh 500 per hectare). This is very low compared to other cash crops like tomatoes, beans, cow peas, cotton or sunflower. However, past and current outgrowers cite short crop maturity and a ready market as attractive features of the scheme. The scheme also provides limited employment to outgrowers and their families, and the community.

Problems, constraints and prospects

The main performance problems of the scheme are low yields and output prices. The low yields have been attributed to farmers' inaccessibility to the essential inputs. The only input the company provides is seed. A majority of outgrowers use neither fertilizers nor insecticides on their sweet-corn crop. The fixed price of KSh 1.00 per kilogram (on the cob) provides low returns to the farmer. These low returns have been identified as the main source of the high turnover rate among outgrowers which undermines viability of the scheme.

The Case of French Beans

Basic description

A smallholder outgrower French bean scheme was first promoted in Kenya in 1976, by Corner-shop Ltd., a local private company. The company promoted the crop in Webuye area of Western Kenya through a farmers' co-operative society. Since 1982, however, the French bean scheme is based on contract farming in Vihiga, Hamisi and Ikolomani Divisions of Kakamega District. The scheme is operated and managed by Hortiequip Ltd., a subsidiary of Njoro Cannery Ltd. At present, there are 21,000 smallholder outgrowers in the scheme. There is some limited production of French beans outside the scheme in the Rongai, Kitale, Naivasha and Thika areas.

French bean production is organized in terms of centres which serve as bases for the supply of inputs and extension services and for bean collection. A production centre has at least 200 farmers. The crop has two production seasons a year coinciding with the long and short rains. One month prior to the beginning of each crop season, the scheme's control clerks (extension staff) recruit farmers on a centre basis. These sign a contract with the scheme management prior to planting time. The contract limits farmers to the technological know-how specifications of the scheme management, effected through supplying outgrowers with inputs and extension services. In terms of inputs, outgrowers are supplied with one kilogram of seed and fertilizers and insecticides. The scheme's extension staff supervises crop planting and inspects each farm at least five times during the crop season.

The contract binds the farmers to sell the crop to the scheme management at a pre-set price. In 1987, the price was set at KSh 4.10 per kilogram of extra fine pods (i.e., those not exceeding 6.0 cm. in diameter, without string or disease, and uniform

and fresh). It obliges the company to purchase all quality output from the farmers. The contracts shift most production risks (due to crop spoilage and/or bad weather) to outgrowers. The main source of risk for scheme management is weight loss (of about 10 to 15 per cent) in beans in transit to the processing factory.

The one kilogram of seed that each farmer is restricted requires a 17 metre by 10 metre plot and is based on careful study of the land and labour available. The production area is densely populated with an average land holding of 0.5 hectares. At present the crop occupies only 8.4 per cent of the area under crops and 7 per cent of total land holdings of individual farmers.

French bean production is labour intensive. According to the Ministry of Agriculture, the crop requires 3,283 man hours per hectare.¹⁷ In Kakamega, the total labour requirement for land preparation, planting, top dressing and harvesting is 3,000 man hours per hectare or 375 man days per hectare. Most of the labour is required for picking and sorting; tasks which require patience and skill. Out of the 4,327 farmers contracted during the first season of 1987, over 4,200 (97 per cent) were women, although they did not hold land titles. Labour, especially female labour, is abundant in the production area. According to the 1979 census, the population density in this area was estimated at over 65 to 70 people per square kilometre. The relative abundance of female labour is accounted for by male out-migration to urban areas. The average wage rate in the area is KSh 15 per day compared to KSh 25 per day in Central Province.

The crop is ready for picking after one and a half to two months from planting. The crop is picked daily and delivered to the collection centres for grading and weighing by the scheme's control clerks. After all the season's crop has been picked, the accounts are finalized and the farmers paid within two weeks. Payment is made net of company loans for inputs.

Processed extra-fine French beans are a high value product with limited domestic market and the crop is grown and processed for export markets in Europe. France alone accounts for 95 per cent of the world market of the product. Njoro Cannery Ltd. sells all the processed beans to Compagnie Saupiquet.

Performance and impact

The scheme has been a major boost to the economy of the production area. It provides employment directly to 21,000 farmers and their

families. Crop returns to individual farmers are substantial. The average return from a 17 metre by 10 metre of land planted with one kilogram of seed is KSh 300 or KSh 4,000 per hectare per annum for two crop seasons. This is much higher than returns to other cash crops like tea, maize and sugarcane grown in the area. The scheme not only provides employment and incomes to participating farmers and their families, but also to the community in terms of company employees and local transporters. Recent introduction of a biotechnology technique which uses the by-product "maganda" to make fertilizer has led to a 40 per cent economy on inorganic fertilizer at sowing time and boosted the yield of the crop by 20 per cent.¹⁸ At the national level, the scheme earns the country substantial foreign exchange from exporting processed beans.

Problems, constraints and prospects

The biggest problem farmers experience in the scheme is inequitable distribution of risks. They bear all risks of crop failures while the management only bears the risk of weight loss of the crop transit to the factory. The management's attempt to form an insurance scheme to protect farmers against risks of crop failure has yet to be approved by the relevant authorities.

About 10 to 15 per cent of input loans are not recovered, usually due to crop failure.¹⁹ Defaulting farmers are usually denied further input loans. Legal action against unrecovered loans has not been taken due to the high legal costs, and maintaining good public relations with farmers. The company perceives the contract as only providing an official framework of operation which in turn creates confidence in the farmers.

Some contracted farmers breed their own seed for planting due to the high cost of selected seed and the need to grow more crop than is permitted. This, however, poses serious quality control problems for the company.

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Contract Farming and Outgrower Schemes in Kenya: Comparative Analysis

A.B. Ayako

*Department of Economics
University of Nairobi*

Abstract

This paper presents a comparative analysis of smallholder outgrower schemes in Kenya for sugarcane, tea, tobacco, sunflower, sweetcorn and French beans. Based on micro- and macro-level criteria, the tea, tobacco, sugarcane and French beans schemes performed better than the others examined. Constraints to replicability of the successful schemes are identified as lack of skilled managers and technicians to manage and operate schemes efficiently, high cost of penetrating into high-value export markets, poor infrastructural development in some production areas, international and domestic market conditions giving rise to low and unstable returns to scheme management and farmers, high cost of training and communication with unskilled outgrowers. Policy implications of the study include the need to streamline production and marketing systems, introducing insurance schemes to protect outgrowers against production and marketing risks, encouraging increased participation by farmers in the schemes' policy and implementation, co-ordinating scheme management and government activities to minimize duplication and strengthening the legal framework for the schemes by introducing a Contract Farming Act.

Introduction

Contract farming has existed in Kenya only since Independence. It accounts for 50 per cent of total sugar, 40 per cent of tea, and 80 per cent of tobacco production.¹ Existing contract farming schemes predominantly use smallholders. Only the barley scheme is based on large-scale contract farming. Approximately 16 per cent of the country's 1.5 million smallholders produce under a contract system.² Public and private smallholder schemes co-exist in the country. However, all the schemes are managed privately, i.e., enjoy operational and technological autonomy. This limits their relationship with national extension, credit and input distribution programmes. The public and private agro-processing firms promoting contract farming schemes in Kenya include KTDA (tea); the Mumias, Nzoia and South Nyanza Sugar Companies (sugarcane); KOL (sweetcorn); BAT (K) Ltd. (tobacco); OCD Ltd. (sunflower); Hortiequip Ltd. (French beans); and East African Breweries (barley). Only the sugarcane schemes have a nucleus estate. Contract farming in sunflower proved unviable and was replaced by a loose system based on appointed middlemen (agents). High turnover rates among scheme outgrowers seem to minimize chances of the sweetcorn scheme being viable in the future.³

Contract farming and outgrower schemes are a significant growing feature of Kenya's rural development strategy. However, these have been accorded low research priority by both academicians and policy makers. Little is known about their relative performance and development impact with respect to food self-sufficiency, productivity, employment-creation, equity and balance of payments. Furthermore, determinants of the nature and viability of the schemes and constraints to replicability of successful ones remain empirical issues. These information gaps present major handicaps to rational design and implementation of schemes that enhance the performance of the country's agricultural sector. This paper attempts to fill the existing information gaps based on an analysis of the results of five case studies on sugarcane, tea, tobacco, sunflower, sweetcorn and french beans.⁴

The results of the case studies are analysed in terms of determinants of the nature and viability, relative performance and constraints to replicability of successful schemes.⁵ Policy and future research issues implied by the results of the analysis are briefly outlined in the paper.

Determinants of Nature and Viability of Contract Farming Schemes

Development and institutional policies. From

our analysis of the six case studies, development policies—especially, agricultural and land policies—are important determinants of contract farming in Kenya. The smallholder bias of Kenya's agricultural development policy and land acquisition policy in the post-Independence period may explain the phenomenal growth of smallholder contract farming schemes in the country. However, the land tenure system—as reflected by presence or absence of private title to land—does not appear a determinant of existing contract farming schemes. While all the six schemes were located in areas where farmers had private title to land, secure access to land, rather than its ownership, was prerequisite for a farmer's participation in the scheme. Indeed, women were the registered farmers in almost all the schemes, despite not having titles to land. The scheme output rather than land title deed acted as collateral for input loans advanced to farmers at the beginning of any scheme crop season. The co-existence of public and private smallholder outgrower schemes is consistent with the country's development philosophy of a mixed economic system.⁶

Market size, security and structure for raw materials and final output. The market for the raw materials of the schemes was generally large, secure and monopsonistic, with the exception of the sunflower scheme. Discontinuation of contract farming in the sunflower scheme and its subsequent replacement by a loose system based on appointed middlemen (agents) could be attributed to the non-monopsonistic market for sunflower seed which made it difficult to police contracts. The many millers running considerable excess capacity tended to free ride on OCD's investment on quality sunflower seed by poaching it.

While the market structure for the final product for all the schemes was monopolistic, the markets varied in size, security and location. Sugar enjoys a large and growing domestic market while made tea enjoys both large and secure domestic and export markets. Processed extra fine French beans have a large and guaranteed market in France, while sweetcorn products have a limited domestic demand. Vegetable oils made from sunflower seed have limited domestic demand due to government policy which prices imported oil fats cheaper than vegetable oils.

Production and processing technology. Production of all the five scheme crops analyzed was labour intensive at all stages of production. Economical crop production using hired labour did not appear feasible. Furthermore, co-ordinated deliver-

ies of quality raw materials of the crops for processing could not be guaranteed through open market sales. The economies of large-scale sugarcane processing, its capital-intensive production and co-ordinated harvest and delivery explain not only the existence of a nucleus estate in the sugar scheme, but also the assignment of most production and harvest tasks to the scheme management.

Prices and pricing policies. Producer and/or final output price levels were determined either by the government, international market conditions or scheme management with implications for differential returns to the schemes. Tea producer prices are determined by international market conditions. Buoyant world market prices for tea and the exemption of tea from export taxes imply very high tea producer prices. However, domestic consumer tea prices are regulated. Both producer and consumer prices of sugarcane are regulated by the government, implying higher returns to both millers and outgrowers than the current depressed world market conditions for sugar would permit.

The producer and final output prices for sunflower and French beans depend on international market conditions. The low producer and final output (vegetable oil) prices for the sunflower are due to depressed international and domestic market conditions for the crop. Furthermore, the market for vegetable oils was reduced by the policy of maintaining a comparatively low price for imported oil fats. The large and lucrative international market conditions for French beans explains the observed high returns to farmers in the scheme. The low producer price of sweetcorn, determined by scheme management, has led to a high turnover rate among sweetcorn scheme outgrowers thereby minimizing its future viability.

Barriers to entry and exit. Four of the scheme crops analyzed (tea, sugarcane, tobacco, and French beans) had barriers to entry. They had long queues of applicants interested in growing the respective crops. Barriers to entry are due to limited domestic and/or international demand for the final products. Entry into the sunflower and sweetcorn schemes was free. Barriers to exit from the schemes existed only for the tea scheme since it illegal to uproot tea bushes

Farmer participation in management. Farmer participation in scheme policy and its implementation was best developed in the tea scheme. In the sugarcane schemes farmers are represented in management by their outgrowers organizations. In the remainder of the schemes analyzed, farmers were not represented in scheme management at all.

Diversification of income sources. Only two of the schemes (tobacco and sunflower) were located in fairly marginal areas of the country in which the scheme provided perhaps the only cash crop production opportunity. The remainder of the schemes, however, were located in the high potential areas where farmers earned income from other crops and livestock. This has implications for their bargaining power with scheme management, their overall income and exposure to risk.

Payment system. A variety of payment systems were revealed in the schemes analyzed with implications for both the stability of farmers' incomes and incentives for timely delivery of quality produce. Payment delays occurred in only the sugarcane scheme, attributed to the separation of the production and marketing functions of sugar. In the tea scheme farmers received two payments for tea. The first payment is fixed per kilogram of green leaf delivered, while the second is a variable annual payment based on the price of made tea achieved internationally. In addition, farmers own shares in the scheme from which they earn dividends. In the sugarcane scheme farmers receive three payments based on plant and two ratoon crops. In the remainder of the schemes farmers received a single payment based on fixed producer prices.

In all cases, payments were made net of loans and charges for inputs and services provided by outgrowers' organizations. In both the tobacco and sugarcane schemes loan recovery was phased out. In the former, scheme loan recovery was restricted to 50 per cent of any sale, while in the latter scheme it was distributed unevenly over payments for plant and ratoon crops. In all the other schemes, the loans were recovered from single sales. Total loan recovery per farmer was highest in the sugarcane scheme due to the assignment of most production tasks to scheme management.⁷

Nature of Contract. Formal contracts were entered in all but the sunflower and tea schemes. The contracts were of a standard form and not based on consensus between the parties (technically referred to as "consensus ad idem"). They were drafted by the scheme management with specifications for technological know-how, sale of output, distribution of production and marketing risks and termination by either party. Generally they transferred greater risk bearing to farmers with implications for low scheme benefits. This kind of distribution of risks has led to a high turnover rate among outgrowers in some schemes (e.g., sweetcorn) thereby reducing their future viability. Breaches of contracts by either parties have not been enforced in law

largely due to the contracts' legal inadequacies and the need to create good public relations with farmers. Scheme management perceives most contracts as merely providing an official framework of operation with farmers. Most contracted farmers know neither the contents nor the implications of the contracts they sign.

Relative Performance of Contract Farming Schemes

Micro-level performance. At the micro-level the schemes were evaluated in terms of returns to farmers, timely supply of inputs, credit delivery systems, research, extension, food security, environmental conservation, payment system (i.e., producer price level, price determination formulae, and promptness of payments) and opportunities for farmer participation. The average returns to farmers were high in the tea, tobacco (KSh 8,500 per annum), sugarcane (KSh 12,000 per hectare), and French bean (KSh 4,000 per annum) schemes, but lowest in the sweetcorn scheme (KSh 1,000 per annum).⁸

Outgrowers were supplied with one or more inputs in all the schemes. In the sunflower and sweetcorn schemes outgrowers were supplied with seeds while in the other schemes farmers were also supplied with fertilizers and sprays. Only the sugarcane outgrowers were supplied with machinery services for land preparation and harvesting. In all cases, the inputs were delivered in a timely fashion.

Credit was provided in-kind (in terms of inputs and services) in all the schemes analyzed. It was administered by the scheme management in all but the Mumias scheme where it was administered by an outgrower organization—Mumias Outgrowers Company. OCD administers its credit on seed through appointed agents in the production areas. Default of credit appeared low in all the schemes, ranging between 10 per cent and 15 per cent of the total loan advanced for inputs.⁹

Research on crop varieties, diseases and seed multiplication rate was an explicit activity of the tea and tobacco schemes. The other schemes merely provided extension services for seed varieties and relevant production techniques developed elsewhere.

All the schemes had active extension programmes which varied in terms of size and level of training of extension staff. The tea, tobacco, and sugarcane schemes had large extension programmes with well-trained staff who worked very closely with outgrowers. The French beans had an elabo-

rate extension programme, but its extension staff (control clerks) had limited training. The sunflower and sweetcorn schemes had skeletal extension staff and largely depended on government extension services for their outgrowers. In general, scheme extension programmes focussed on the scheme's crop and, therefore, did not duplicate existing government extension programmes. The extension staff to farmers ratio was lower in the schemes than the national average. The tobacco scheme extension programmes were rated superior to those of government due to their farm management and effective farmer communication focus.

Due to crop acreage restrictions per farmer in all the schemes it would appear that introducing the schemes did not sacrifice household food security. Furthermore, scheme crop income was used to supplement household food short-falls. However, the schemes may have compromised household food security indirectly through their competition for limited family labour.

Only the tobacco scheme explicitly promoted environmental conservation through tree planting and constructing ridges. Afforestation is a requirement in the contract the outgrowers sign with the scheme management. By 1987 the scheme had contributed about 13.5 million trees in the production areas.¹⁰

The relative performance of the scheme with respect to the payment system and opportunities for farmer participation has been presented in the previous section.

Macro-level performance. At the macro-level the schemes were evaluated in terms of contribution to rural employment, balance of payments, government budget, and reduction in personal and regional income distribution imbalances. All the schemes together created direct employment for more than a quarter million participating farmers and their families and, indirectly, to the community in terms of scheme employees, transporters, stockists, etc. In 1988, for example, the tobacco scheme alone directly and indirectly employed about 600,000 people.¹¹ Total employment in the tea and sugarcane schemes is estimated to be even higher. Only the sweetcorn scheme appears to have made least contribution to rural employment in Kenya.

The larger schemes made significant contributions to the government budget in terms of excise and income taxes. In 1982, the tobacco scheme contributed about KSh 1 billion, while the sugarcane scheme contributed about KSh 1.3 billion during the 1978-87 period.¹²

The tea and French bean schemes earned the

country substantial foreign exchange through exporting their final products. The sugarcane and sunflower schemes contribute to import substitution in sugar and cooking oils thereby saving the country foreign exchange. The tobacco scheme both saves and earns the country foreign exchange through import substitution in green leaf tobacco and exports of leaf tobacco to Europe and cigarettes to neighbouring countries. The foreign exchange savings and/or earnings appear extremely limited in the sweetcorn scheme.

Schemes' performance with respect to redressing personal and regional income distribution imbalance could not be established with the data from the case studies. However, their rural location offers opportunities for reducing the rural-urban income distribution imbalance. Locating the sunflower scheme in the marginal areas provided opportunities for reducing regional income distribution imbalances. We could not establish whether the schemes had ameliorated or exacerbated intra-regional income distribution imbalances.

Constraints to replicability

None of the schemes analyzed were unqualified successes. However, the tea, tobacco, sugarcane and French bean schemes had performed better on most elements of the evaluation criteria than any of the other schemes analyzed. Replicability of the positive elements of these schemes elsewhere would be constrained by the following factors:

- lack of skilled managers and technicians to manage and operate schemes efficiently
- high cost of penetrating into high-value export markets. Entering such markets require costly information on characteristics of consumer and retail demand (i.e., quality, packaging, seasonality); technical and marketing innovations of competitors; tariff and non-tariff barriers and preferences; and wholesale and retail marketing channels via brokers or multinational corporations.
- poor infrastructural development in some production areas that would inhibit delicate and timely transportation of produce to distant export markets
- poor international and domestic market conditions reflected in low and insecure demand for raw materials and final products of potential schemes

- high cost of training and communicating with unskilled outgrowers

Policy implications

The following are the main policy changes implied by the schemes analyzed:

- streamlining the production and marketing of some crops (e.g., sugarcane) to minimize payment delays
- introducing production and/or marketing insurance schemes to protect outgrowers against crop failures and market vagaries
- phasing out recovery of loans made for inputs and services
- encouraging greater and more effective participation of outgrowers in scheme policy design and implementation
- integrating contract farming schemes into national agricultural programmes to minimize duplication of resources
- streamlining and strengthening the legal framework for contract farming through introducing a Contract Farming Act. This would protect outgrowers through introducing minimum and compulsory provisions for each contract, institutionalizing negotiations between outgrower organizations and scheme management and introducing guaranteed minimum returns scheme.
- providing training courses to farmers in basic literacy, accounting, and cash management to minimize conflicts between outgrowers and scheme management. Quasi-training activities such as group meetings to explain contract terms, interest rates, calculation of deductions, and other technical areas would improve efficiency and minimize conflicts.

Future research issues

There are a number of areas where further

research would greatly enhance the findings of the present study and provide a basis for policy actions regarding production and marketing contracts. The first area is to undertake theoretical and empirical analysis of the determinants of the viability, distribution of benefits among scheme actors and performance of the existing contract farming schemes in Kenya. Second, the impacts of contract farming schemes on transfer of technology to outgrowers and income distribution should be investigated further. The third area is the impact of rights to land and other regulations regarding agricultural management on the structure and viability of contract farming schemes. The performance of existing outgrowers organizations should be analyzed and, lastly, the present study could be extended into livestock, poultry, manufacturing and services sub-sectors of the economy that would augment existing data on high value export crops.

Notes

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Contract Farming and Outgrower Schemes: Asparagus Production in Lesotho

Sam Rugege
Faculty of Law

Sehoai Santho
*Faculty of Social Sciences
Institute of Southern African Studies,
National University of Lesotho*

Abstract

This study is based on a survey of nearly 300 asparagus outgrowers in Maseru District, Lesotho conducted in 1987-88 and interviews with government officials and representatives of the processing company. Key features of contract farming in Lesotho are discussed. Public policy issues are examined including the Lesotho economy, the agricultural development strategy, land tenure and land management issues and the relationship between the Lesotho government and foreign aid agencies. The production system in which outgrowers are involved, particularly the complex contractual relationships between outgrowers and the agri-business company, is examined as well as the processing and marketing structure. The position of women as growers and dominant workers at the processing plant is examined including problems they face and the implications of seasonal employment. The increasingly important role of the Asparagus Growers Cooperative Society is discussed.

Key factors determining the success of the asparagus outgrower scheme are: suitable agro-climatic conditions; smallholder, family-based production with a high level of self-exploitation by the farmer; effective extension services; a guaranteed market in Europe and availability of concessionary capital resources to the processing company and, to a lesser extent, to the outgrowers. The study indicates that asparagus is a unique crop. Although the outgrower scheme is largely a success, its replicability in other product lines would not be easy.

The asparagus production and processing scheme in Lesotho, the focus of this study, is regarded as the most significant contract farming and outgrower model within the agricultural sector of the country. The contract farming and outgrower model of agricultural production and its relationship to enterprises that process and sell agricultural products (whether to domestic or external markets) do not have a long history in Lesotho. The introduction of asparagus—a crop that is neither indigenous nor traditionally grown—in Lesotho's agricultural sector was advocated by a United Nations Development Programme/ Food and Agriculture Organization (UNDP/FAO) horticultural consultant to the Government of Lesotho in 1971. A case for asparagus production was made on the basis of agronomic, agro-climatic and economic considerations. Asparagus is a drought-resistant crop which could be adopted without great difficulties by Lesotho's female-dominated agrarian society and could gainfully and intensively employ rural (female) labour. That it is also very marketable as

a high-value crop in the target market of Western Europe also impressed the Government of Lesotho and its Ministry of Agriculture (MOA).

Asparagus was adopted within Lesotho's agricultural sector on the basis of the contract farming and outgrower model. This had been advocated on the grounds that it would stimulate the revival of the agricultural sector into a dynamic export sector and bring about agricultural transformation with the emergence of off-farm processing industries, such as canning enterprises, and spread the benefit of the process among rural-based asparagus outgrowers.

Production and processing of asparagus and export to Western Europe was implemented in January 1974 as a pilot scheme within an area-based project of the MOA in Maseru District, the Thaba-Bosiu Rural Development Project (TBRDP). This was a donor-supported project with broad rural development goals.

The asparagus production and processing scheme has two distinct parts. The asparagus production part consists of the outgrowers themselves

who are being serviced with technical advice by the MOA extension service and inputs by Basotho Farm Produce (BFP), a subsidiary company of the Lesotho National Development Corporation (LNDC) under the Ministry of Trade and Industry. BFP also provides agronomic services to the asparagus outgrowers.

The second section is the cannery itself, Basotho Fruits and Vegetable Cannery (BFVC), a subsidiary of the LNDC which serves mainly as the marketing and distribution channel for the asparagus cash crop. This is a mainstream agri-business enterprise, which, although dealing mainly with asparagus, is also diversifying into processing beans, peas, fruits and jam.

The significance of the asparagus production and processing scheme as a case study is based on the following considerations:

- It appears to be the most representative scheme in Lesotho in terms of the socio-economic impact of agri-business ventures that process domestic agricultural produce on the basis of a contractual link between outgrowers and enterprises, and in terms of its replicability to other agricultural product lines.
- The scheme is fourteen years old, enabling this study to evaluate its performance on micro and macro-economic criteria, especially in relation to Lesotho's economic development objectives and its impact on the environment, i.e., soil fertility.
- In the particular circumstances of Lesotho, this scheme illuminates the central role of foreign aid agencies—whether multilateral or bilateral—in shaping national policy towards the agricultural sector in Lesotho. This scheme is regarded by the Lesotho government as the most viable model of the MOA strategy to intensify production and processing of high-value horticultural crops.

The success of the scheme could clearly have significant macro-economic implications on agricultural development, on-farm and off-farm employment generation and on the strategy of agro-industrialization.

Public Policy Issues and Context

Lesotho's economy

Lesotho is a small country of 30,000 sq. km.

which is land-locked and completely surrounded by the Republic of South Africa (RSA). The country is mountainous, with eighty-seven per cent of its area consisting of rugged terrain and only thirteen per cent being considered arable.

Lesotho has a structurally weak economy which is open, with minimum restrictions on the flow of commodities between Lesotho and the RSA—which has a more developed agricultural and industrial production and marketing infrastructure. The price structure of traded commodities in Lesotho (including agricultural produce) is profoundly influenced by the economy of the RSA.¹

Lesotho's meagre natural resources and colonial history of neglect and underdevelopment have led to a situation of structural dependence on the RSA. The country depends heavily on South Africa for paid employment (mostly in the gold and coal mines), imports of food and manufactured goods and transport routes. The remittances of Basotho mine workers in the RSA contribute over 50 per cent of Lesotho's GNP.²

The major structural constraints and imbalances facing Lesotho are: low agricultural productivity and a high dependence on food imports; low industrial productive capacity; a narrow and undiversified export base; excessive reliance on migrant labour remittances; and a high dependence of government revenues on receipts derived from the Southern African Customs Union (SACU) compensatory funds.

In the last twenty-one years of Lesotho's post-independence history (1966-87), the government has attempted to address the above constraints and imbalances through various national policy measures, the most important of which have been the various five-year development plans which set out government development policies and targets.

The first five years of Lesotho's post-colonial period (1966-70) was undistinguished and no significant economic growth occurred nor were there any noteworthy national development policy initiatives. Nevertheless, the government did establish the Lesotho National Development Corporation (LNDC) in 1967 to promote medium and large-scale investment in Lesotho and to support industrial development.³ Another achievement was the successful re-negotiation of the Southern African Customs Union Agreement in 1969 between the Republic of South Africa, Botswana, Lesotho and Swaziland. The revised compensation formula provided Lesotho with more revenue from the Customs Union pool.⁴

The subsequent fifteen-year period (1970-85)

was distinguished by two features. Firstly, the government prepared five-year development plans which set out guidelines and targets for the development of various sectors of the economy and the public sector itself. In implementing these programmes, the Government of Lesotho (GOL) depended heavily on external capital and technical assistance offered by various foreign aid agencies.⁵

Secondly, the Lesotho economy (both GDP and GNP) registered high growth rates. Annual growth of the GDP, attributed to both private and public sector investment, averaged 7 per cent. Domestic resources were augmented by bilateral and multi-lateral aid inflows which contributed substantially to overall growth.⁶ During the 1970s mine wages and mineworkers' remittances increased by almost 8 per cent per annum in real terms, with the consequence that aggregate GNP grew marginally faster than GDP, at 7.4 per cent per annum.

The high economic growth rates of the 1970s were still based on a structurally weak economy. The positive factors were clearly exogenous: increases in mine-worker remittances due to a rise in mine wages, increased SACU funds, increased tourism incomes (mainly due to South African tourists), huge foreign aid inflows and investment in diamond production in Lesotho by the South African mining house, De Beers Ltd.

In the 1980s the economic growth rate has not been maintained, illustrating the vulnerability of the Lesotho economy to exogenously-induced shocks. Negative factors include a decrease in RSA mine employment for Lesotho citizens, De Beers' decision to close the diamond mine in 1982, a decline in concessional aid flows, the RSA's economic down-turn and its consequences on Lesotho and worsening government budget deficits.⁷

The most significant effect has been the stagnation of agricultural output due to a historic decline in productivity, the drought cycle, and the increasing dependence of rural families in Lesotho on off-farm wage remittance resulting in the neglect of agriculture. Lesotho's small-scale agricultural sector has declined in its contribution to the GDP in the last eleven years. While in 1975 it accounted for 38 per cent of GDP, in 1986 it contributed only 21 per cent of GDP.⁸ Yet this is still the country's most important sector given the fact that over 85 per cent of Lesotho's population of 1.6 million live in rural areas while 60 to 70 per cent of the labour force derive some supplemental income from agriculture.⁹

Agricultural development strategy

Given the negative impact of exogenous factors

and bleak prospects for economic growth in the 1980s the government's basic objectives, as outlined in the four five-year plans, are to maximize national income and employment and reduce poverty through rural development.¹⁰

According to the five-year plan for 1986-90, achieving these basic objectives will depend on restructuring the Lesotho economy by maximizing investment in the productive sectors, i.e., industry and agriculture. Agriculture-based industries can be regarded as the interface of these sectoral priorities.

The sectoral goals and policies for agriculture are to: intensify soil conservation, land utilization and environmental protection; increase agricultural production through intensive and extensive agricultural development and to establish large-scale labour-intensive agricultural rural development programmes to generate employment.¹¹

Intensive crop and horticultural production is a priority objective,¹² due to:

- a large domestic demand for fruits and vegetables in the burgeoning towns and cities is developing, currently met by imports constituting up to 75 per cent of Lesotho's consumption.
- these products bring relatively high returns which can compete effectively with off-farm income
- entry into these ventures is relatively easy due to the absence of any significant economies of scale in production.

The above considerations are based on farming systems research sponsored by the government on a range of high value crops, including lucerne, vegetables, fruits, essential oils and asparagus.¹³ The plan then sets out the following objective:

During the fourth five-year plan period, the government will encourage the development of horticultural production to reduce dependence on foreign imports and to increase export earnings. Strategies involving specialized marketing assistance to small farmers and reduced input prices to increase profit margins will be considered to improve the competitiveness of the small Basotho farmers.¹⁴

The government has identified and set tasks to be performed by the Ministry of Agriculture (MOA) to support high-value crop production. The follow-

ing technical and marketing services will be undertaken by the Ministry.

- intensify horticultural research, both on-station and through adaptive research programmes
- strengthen MOA's horticultural extension services through appropriate training and developing effective advisory messages. Given budgetary constraints on the expansion of the Ministry's extension staff, extension service priorities have to be set.
- improve marketing services offered by MOA. The Ministry is expected to establish a framework for monitoring markets and dissemination of market information, including advice on import regulations.¹⁵

Land management issues

The MOA has set out crop production projections which can be attained if Lesotho's land resource base is optimally utilized. Given that only 13 per cent of the land area is considered arable (300,000 hectares) only up to 3 per cent of this land is regarded as potentially suitable for intensive cultivation. Of this land area, about 17,000 hectares is potentially suitable for irrigation, representing about 0.06 per cent of the arable area. If these land resources are used optimally, 270,000 tonnes of cereals, 23,000 tonnes of legumes, 70,000 tonnes of vegetables and 25,000 tonnes of fruits can be produced.¹⁶

Land management issues are central to the agricultural development strategy, as is the judicious use of the land base. In seeking to optimize the use of the land resource base, the government established a Land Policy Review Commission in January 1987 which, following seven months of country-wide consultations, submitted its findings and recommendations to the government in October 1987.¹⁷ The Commission found a high degree of mis-management of arable and grazing lands throughout the country and a seeming inability of most Basotho farmers to invest in land improvements and soil conservation. Nevertheless the Commission regarded the Land Act of 1979 and other land husbandry laws as regulatory tools for improving land use and management.¹⁸

In order to maximize the production of high-value crops, on either dry or irrigated land, the basic policy is to consolidate existing fragmented holdings into economically viable farming units. The alternative would be to encourage land sub-

leasing from those allotted land by enterprising farmers or enterprises to consolidate holdings or optimize land use while guaranteeing the interests of landholders who would derive rental income from the sub-leasing relationship.¹⁹

Lesotho's national policy and foreign aid agencies

The introduction of asparagus production and processing as a pilot contract farming and outgrower scheme was initiated by multilateral donor agencies, UNDP/FAO, and implemented by the MOA during the first and second five-year plan (1971-80). In the third plan period (1980-85) the scheme was transferred to the LNDC under the Ministry of Trade and Industry, becoming an agribusiness project proper but still supported by the UNDP/FAO for capital and technical inputs. The European Development Fund (EDF) under the auspices of the EEC/ACP-LOME Convention is involved in the asparagus expansion programme in the fourth plan period (1986-90).

Other multilateral donor agencies, like the World Bank (IBRD), have played a key role in creating an institutional environment conducive to this agricultural commercialization strategy since 1975. Bilateral aid agencies such as the US Agency for International Development (USAID) and the Overseas Development Administration (ODA) have also played an important role in shaping the government's agricultural development strategy—the culmination of the fifteen years of experience with various multilateral and bilateral donor-funded projects and programmes. During this period, the foreign aid agencies based in Lesotho came to exercise overwhelming influence in determining the government's objectives, priorities and strategies.

In assessing its experience with foreign aid directed towards the agricultural sector, the latest policy paper of the Ministry of Agriculture notes that while the plans have served a useful purpose in mobilizing donor and local funds, the agricultural production targets have never been realized except for the establishment of physical infrastructural facilities. It observes further that:

The transition to self-sustaining development (in the agricultural sector) after donor support has been withdrawn is negative, thus implying wasteful and ineffective utilization of resources. This situation is characteristic of nearly all donor-Government funded projects and schemes.²⁰

Thus the government is increasingly being forced to evaluate the usefulness, quality, and viability of foreign assistance projects. These projects are more often than not advocated by donors who, in the process, determine the government strategy on a project-by-project basis. One of the objectives of the fourth plan is to initiate a decisive shift from this *ad hoc* project approach to systematic programmes of investment in the productive sector of the economy, building on clearly-identifiable priorities. The medium to long-term implications of this shift are still to be seen. Foreign assistance agencies still enjoy a very influential status due to the gross inadequacy of domestically-generated capital investment surpluses.

History of the Asparagus Production and Processing Project

During the first five-year plan period, a study commissioned by the UNDP/FAO identified asparagus as one of the high cash value crops most feasible and promising in returns.²¹ This study became the basis for initiating the scheme within the framework of the Thaba-Bosiu Rural Development Project (TBRDP) in January 1974.

Plans for field activities, nurseries, and a small cannery were submitted to the GOL for approval and to the UNDP country programme for funding. Farmers were selected and training sessions organized within the TBRDP project area which had about 6,000 acres of soil suitable for asparagus production.

TBRDP provided skilled personnel, seedlings, fertilizers and tractor services. Farmers agreed to sell all their produce to the cannery at a specified price. Repayment of costs by farmers was to be made by a check-off on the sales, and spread over a ten-year period. Relatively small plots (0.25-0.5 acre) were allocated to each farmer to allow for the high labour requirements of asparagus.

About twenty months after the first planting (in January, 1974) a first harvesting operation was conducted with the project purchasing asparagus spears at the rate of 25 cents (0.25 Maloti) per kilogram for first grade and 12.5 cents per kilogram for second grade. The spears were then transported to a kitchen-type cannery in Masianokeng where 600 cans were produced as samples and sent out to various exporters throughout the world to demonstrate the quality of the product.²³

The asparagus scheme began in January 1974 with 5 acres and seventeen growers. By the following planting season in December, 1974, sixty-five

more growers pledged 31 acres of their land. The third planting season was August 1975, and thirty-two more growers were allowed to plant 16 acres of asparagus.²⁴ By December, 1976, 54 acres had been planted by one hundred and seventeen growers.

By 1975 a pilot canning plant had been built with the assistance of the United Nations Capital Development Fund (UNCDF) at a cost of US\$185,000 and was in operation the following year. By 1977, some 12,000 cans of asparagus had been produced out of the output of one hundred and fifty-two farmers who had planted 75 acres of asparagus. The target for 1982/3 was for some 300 acres to be planted with asparagus with about six hundred and fifteen small-scale farmers as out-growers.

A May, 1978 evaluation concluded that investment in processing equipment was necessary. The UNCDF approved a second plant amounting to US\$165,000 on the grounds that it would enhance the profitability of the scheme.

Towards the end of the second five-year plan, the UNCDF received a request for an additional US\$1,047,000 for the scheme and the plant even before the second approved grant could be disbursed. The rationale for the new proposal was to expand the processing capacity of the plant to 2.5-3.0 tonnes of asparagus per day, especially for the September through December harvesting season. The increased processing capacity in the asparagus off-season would be used to process beans to be canned in tomato sauce.

A feasibility study team organized by the Industrial Council for Development (ICD) considered the new proposal and ultimately found the proposal sound after assessing the long-term prospects for fruit and vegetable production and processing in Lesotho. A grant of US\$1.05 million was then approved by the UNCDF in February, 1980.

In the third five-year plan period the plant was transferred from the MOA to the LNDC, effective in 1980. This transfer marked the transformation of the scheme from a rural development project to an agro-business venture under the auspices of the Ministry of Trade and Industry (MTI). The new board of the cannery was preoccupied more with viability and profitability than with rural development.

The cannery was registered as a company under the Companies Act as Basotho Fruit and Vegetable Canners (BFVC) as a wholly-owned subsidiary of the LNDC.

The performance of the BFVC in implementing the UNCDF programmes is shown by the follow-

ing, which it had achieved by 1987:

- Over 500 acres had been planted to asparagus. The asparagus programme set target was to expand the asparagus area to 370 acres by 1992.
- Additional cannery equipment capacity had been installed with supplemental funding from the EEC counterpart food-aid funds. Apparently, the UNCDF fund was not able to fully equip the cannery. By 1988 the seasonal capacity was about 2,250 tonnes of canned asparagus.²⁵

In 1987 the EEC approved an ambitious asparagus expansion programme for 1986-90 amounting to M 11.5 million (4.75 million ECU) after considering a MTI/LNDC project proposal for further expanding the asparagus production programme.²⁶

The Land Tenure Context

Land tenure is relevant to contract farming because it may determine whether an agro-industrial company engages in estate farming to wholly or partially supply itself with the raw material, or leaves the farming to outgrowers. Where title to land is easily transferable, a company may prefer large-scale farming, while in situations where title is not transferable, or there are political risks involved in owning land, the company will usually prefer to use outgrowers as a source of supply.

Land tenure is also relevant where it becomes necessary to expand production. The company may want to extend its existing estate farming activities or the outgrowers might want to use the income from their crop or credit facilities from a financial institution, to purchase land and bring it under the crop. In addition, the company may want to purchase or lease land in order to lease or sub-lease it to tenant farmers who then produce the crop on a contract farming basis.

Lastly, land tenure issues are relevant in a country like Lesotho where much of the land is still controlled by chiefs under a traditional system that does not provide for its sale. Thus, any changes in land tenure which affect the control of land by the political authority will be relevant to the farmer who wants to engage in contract farming.

The Land Act of 1979

A change in the land tenure system occurred in 1979 which introduced limited rights over land and a limited market in land. Prior to 1979, land rights could not be sold, neither could land be mortgaged.

The Land Act of 1979 introduced lease-holding tenure and license rights. Under the traditional tenure, land was allocated for use annually—thus there was no security of tenure. Under the lease system, the farmer would be secure in holding his or her lease for at least ninety years.

In passing the Land Act of 1979, the State had hoped to encourage farmers to engage in commodity production, including participation in outgrower schemes. Aspects of the Act which are relevant to contract farming are as follows:

Conversion of traditional 'allocation' into lease: Section 11 of the Act gives a farmer holding land under traditional allocation the option of converting it into leasehold land by applying to the Commissioner of Lands. This has a number of implications favourable to the farmer:

- it ensures that the farmer can confidently invest in the land knowing that it will not be taken away in the next ninety years
- the land under a lease can be mortgaged and thus give the farmer the financial ability to develop the land
- the farmer can dispose of his or her interest in the land by selling the lease (subject to obtaining permission from the Minister), thus preventing loss of investment
- the farmer can sublet part of the land and the sub-lessee could then engage in contract farming

Inheritance. Unlike the traditional tenure system, the Land Act makes land inheritable by a single heir, providing continuity in land-use with little risk of fragmentation, and potential for greater productivity.

Consolidation. A farmer with one or two small fields can take over, through purchase or sub-lease, equally small adjacent fields so as to consolidate the land into one economically viable farm. Such a farm would enable the farmer to engage in outgrower schemes for the market.

Selected Agricultural Areas (SAA). Sections 50 and 51 of the Act allow the government to take the initiative to improve agricultural productivity. The Minister is given the power to declare a particular area a Selected Agricultural Area (SAA). Such land would then be subdivided into economically viable units and allocated to individual farmers who would then participate in an agricultural

scheme. The farmers would be selected by the Minister upon application, to ensure that those selected have the ability to carry out the scheme proposed.

The SAA designation is a potentially ideal framework for encouraging contract farming as a strategy for agricultural development, particularly since farmers in the SAA scheme would be easier to supervise and likely to respond better to extension services than ordinary small-scale farmers. Credit would also be readily available. On the other hand, the more prosperous farmers would be selected to participate in the SAA schemes. This may contradict the objective of improving the lot of the poorer members of the rural community.

Although the provisions of the Land Act appear to be favourable to contract farming, outgrower schemes can also thrive under a traditional land tenure system. Contract farming has hitherto been successfully practised on traditionally-held land in asparagus production in Lesotho, and fruit production in Swaziland on the so-called Swazi Nation Land.²⁷

In summary, traditional land tenure in Lesotho does not pose a serious obstacle to contract farming. If desirable, however, commoditization of agricultural production through small-scale farmer outgrower schemes could be enhanced by implementing the provisions of the Land Act of 1979. However, implementation of this Act has not been achieved.

Outgrowers and the Production System

The outgrower

According to company records there were about one thousand outgrowers involved in the asparagus scheme by the end of 1987. The survey showed that 80 per cent of the sample of outgrowers were women, typical of rural farm management in Lesotho. This is largely because an estimated 50 to 60 per cent of Lesotho's able-bodied male labour is employed in South Africa.

The outgrowers are poor peasants, most of whom derive their means of subsistence partly from the land and partly from the remittances of their relatives working in South Africa. According to FAO, 60 to 65 per cent of Lesotho's households benefit directly or indirectly from migrants' earnings. Further, 75 per cent of the rural population live below the poverty datum line of M 355 per month for an average family of five people.²⁸ Although asparagus growers have started to earn monthly in-

comes higher than M 355 per family, they still basically live below the poverty datum line.

Access into the asparagus scheme is relatively easy since it does not make insurmountable demands on the resources of the poor farmer in terms of land, capital or labour. Shortage of arable land has not affected the cultivation of asparagus. Under the traditional land tenure system each adult member of the village is entitled to three fields. Thus heads of households will normally have at least one field if not two. Due to the labour-intensive nature of asparagus, only small plots of land (averaging 0.5 acres per family) are required for the successful cultivation of the crop using family labour. Labour is generally available since most rural households where the asparagus is grown (Maseru District) have an adequate family labour capacity (four to five persons).²⁹ The insistence of the MOA and, later, BFP extension officers that land under asparagus should normally not exceed 0.2 hectares per household is based on the assumption of such an availability of family labour. However, the survey showed that at least 50 per cent of the outgrowers interviewed employed wage labour, 70 per cent of them employing at least one to two persons. Lastly, no capital outlay is required on the part of the farmer. Tractor services are provided by BFP, which, through the outgrowers' co-operative also sells seedlings and necessary inputs. The only factors expected of the farmer are labour and land.

The entry procedure

Recruitment into the asparagus outgrower scheme has been the duty of extension officers since the conception of the scheme in 1974. At first it was the MOA/TBRDP extension staff, then MOA and BFVC staff, and today it's done by MOA and BFP extension staff.

Extension officers identify a village with potential for asparagus cultivation after satisfying themselves of the suitability of the soil and access to roads. They then invite applications from people in the village who are able and willing to engage in asparagus production. Successful applicants are selected on the basis of: possession of land, distance of the field from the village asparagus collection centre, and availability of adequate family labour to tend the crop.

Entry into the scheme, however, is controlled. The reason for control is to avoid excess supply of asparagus beyond the plant capacity of BFVC. However, following the successful experiment of exporting fresh asparagus—which appears more profitable than canned asparagus—the BFP may

decide to relax this control. Nevertheless, the present practice is that of planned rather than unrestricted expansion.

Asparagus production process

Until 1987, asparagus in Lesotho was produced in two ways: through an outgrower contract farming scheme and through estate farming by the BFVC. In 1987, however, estate production of asparagus was discontinued and the land, previously leased from the government, was leased out to outgrowers on a sub-tenancy basis.

Estate asparagus farming was abandoned for three reasons. Firstly, there were labour relations problems involved in employing farm labour, and administrative costs incurred in full-time supervision of field operations as compared with occasional monitoring of outgrower farm activities.

Secondly, hired labour is not as efficient as self-employment with regard to asparagus. Asparagus production is a clear case of self-exploitation: outgrowers working on their own fields work long hours without regard to return for their labour, whereas hired wage earners work on the basis of a fixed working day or otherwise have to be paid for overtime.³⁰ Thus it is cheaper and more profitable for the BFVC to buy asparagus from outgrowers than to produce it.

Thirdly, the justification for estate farming in terms of quality control and ensuring sufficient supply no longer existed in the case of asparagus. Quality control is not only assured through seminars conducted by MOA and BFP agronomists and extension staff, but is also an objective of the outgrowers co-operative whose senior, experienced outgrowers help in educating new outgrowers on how to obtain a high quality crop. In terms of supplying sufficient raw material to the cannery, the EEC expansion project—coupled with the absence of alternative markets for asparagus—will ensure sufficient supplies to meet the cannery's present and expanded capacity.

Estate farming operations are now limited to producing green beans, peas and fruits (peaches and apricots). This is done on an irrigated nucleus farm on land leased from local farmers and is under the management of BFP not BFVC.

The outgrower scheme

Asparagus is a labour-intensive crop; it is very sensitive to weeds and requires careful and constant weeding. Harvesting is also labour-intensive. Asparagus spears have to be timed as they emerge out of the soil in the early hours of the morning. For

this reason, and because the poor farmers cannot afford to employ much wage labour, the MOA and BFA agronomists insist that the land planted with asparagus should not exceed 0.2 hectares. However, once outgrowers have shown the ability to keep their asparagus fields free of weeds and to harvest on time, they may be allowed to extend production.

The sensitivity of asparagus to weeds prevents intercropping. At the same time, since asparagus is a perennial crop with annual harvesting for eight years without replants, the asparagus field will not be available to the outgrower for other crops for at least eight years. However, given the small size of the asparagus plot and the fact that the average land holding in Maseru is 1.5 hectares per household, food production is not prejudiced by asparagus production.

In this contract farming/outgrower scheme, the BFP prepares the soil (ploughing and harrowing), plants and provides seedlings—a factor limiting participation in asparagus production. Just before the harvesting season begins, BFP tractors heap up the soil into mounds to cover the asparagus plants so that spears can emerge protected from direct sun. Outgrowers and their family members weed, harvest and deliver asparagus spears to the village collecting centres where they are washed, weighed, and put on a BFP truck to be transported to the factory.

To ensure the quality of the asparagus delivered to the canning factory, the village committee of the Setlabocha Co-operative sort out the asparagus at the collection centres before it is weighed. The weighing and recording of weights is done by an employee of the co-operative, a task previously performed by BFVC officials. The asparagus is weighed again by the BFVC official at the factory gate and any shortfall in weight due to evaporation is absorbed by the co-operative. The cooperative is, of course, unhappy about this.

The farmers are present during the weighing and recording process. Because most of them are illiterate or semi-literate, they are unable to follow closely the weighing and recording of their produce. However, they are less concerned now that their own employee, rather than that of the company, does the weighing and recording. Previously, outgrowers felt the BFVC officials were cheating them during weighing and recording.

Contractual arrangements for production and sale

When the scheme started in 1974, farmers signed

an agreement with the Ministry of Agriculture (MOA) whereby they were to grow asparagus under certain conditions. Under the agreement, the farmer agreed to set aside a field on which he bound himself to grow nothing but asparagus for a period of not less than six years. The farmer agreed to tend the crop, harvest it, and sell all of it to the processing plant which was then operated by the TBRDP. The Ministry, on the other hand, agreed to prepare the soil, provide seedlings, fertilizer, insecticides and pesticides and provide harvesting implements. The Ministry further agreed that during the harvesting period (after a year) it would pay for the crop on a weekly basis at an agreed price. Expenses incurred by the Ministry were to be recovered by deductions from asparagus sales paid to the farmer. Sub-standard produce was to be rejected. The Ministry's extension officers kept a record of all transactions with the growers and the growers were given cards on which such transactions were entered.

These basic terms of the contract between the outgrower and processing partner were retained when the processing cannery was transferred from MOA to LNDC, except that growers were no longer given written contracts. Nor were they given the record cards showing what produce they had delivered, what deductions were to be made for services, inputs and implements given to them, or the payments to which they were entitled. There was instead an oral contract: after the extension officer accepted the application of the farmer to join the scheme, the farmer was simply informed of what was expected of him or her and the price the farmer would receive when the asparagus was ready. This left room for uncertainty as to the terms and conditions of the arrangement. Farmers could not be sure that figures were not manipulated by the cannery employees.

In 1984 LNDC formed a new company, the Basotho Farm Produce Ltd. (BFP), to deal with the agronomic aspects of production, leaving BFVC to concentrate on processing and marketing. BFP took over the task of providing tractor services, farm inputs, and implements to asparagus farmers. However, the company did not deal with the farmers directly but went through the Asparagus Growers Co-operative Association which had been formed in 1979. Today, all agricultural inputs from BFP to the farmers are channeled through the association. So is the payment for such inputs by the farmers. The sale of asparagus to the cannery and payment by BFVC to the farmers is also done through the association.

Since this arrangement involves the farmers,

their association, BFVC, and BFP it is difficult to determine who has a contract with whom. It may be said that there are three contracts involved in the scheme. Firstly, there is a contract between Setlabocha Co-operative Society and BFVC whereby the co-operative, on behalf of its members, agrees to sell and the latter agree to buy all asparagus which satisfies certain quality standards, at a price fixed at the beginning of each season. The second contract is that between BFP and the Co-operative. The terms of the contract are that BFP supplies inputs, tractor services, extension services and transport for asparagus from the village collection centres to the factory. The Co-operative, on the other hand, undertakes to supply the inputs and farm implements to the farmers and recover their cost from the farmers in order to pay BFP.

The third arrangement, which can be called contractual, is between the outgrowers and the co-operative. By paying a 10 maloti fee, members become entitled to certain rights and services as contained in the by-laws of the association. Setlabocha advances farm inputs and implements to the member farmers and collects and records the asparagus delivered by the outgrowers. The outgrower agrees that the cost of inputs shall be deducted from the price paid at a rate fixed by BFP and Setlabocha.

This seems like a fairly complex set of relations establishing various legal rights and obligations. In practice, the relations are not so complex. Although in law BFP is a separate company from BFVC, if the "corporate veil" is pierced, it is clear that the two are different divisions of the same company. This position is recognized by the parent company of the two subsidiaries. In a paper prepared by LNDC, it is acknowledged that: "farmers assisted by Basotho Farm Produce are the sole suppliers of asparagus to Basotho Cannery. Basotho Farm Produce is, however, administratively run by Basotho Cannery."³¹ In practical terms, BFP, as the agronomy division of BFVC, deals with Setlabocha in relation to production of asparagus. Though BFVC purports not to have any direct relationship with the outgrowers, it is in constant contact with them through extension officers (both the MOA and BFP extensionists). Thus BFVC is able to monitor production and quality control while unloading some of its previous administrative duties onto the co-operative.

Basotho Farm Produce (Pty) Ltd.

Given the need to guarantee the supply of adequate raw material (asparagus) of desirable quality,

the UNCDF project provided for the establishment of a nucleus farm. This model estate farm was to produce and supply some agricultural products to the cannery as well as supply outgrowers with inputs and extension services. The nucleus farm enterprise was incorporated in 1984 as a wholly-owned subsidiary of the LNDC, named Basotho Farm Produce (BFP). The objective of establishing such an agronomic and extension subsidiary of LNDC was to expand asparagus production by assisting asparagus farmers to establish and maintain their farms.

Assistance to outgrowers was extended in the form of medium-term credit (3 to 4 years) for establishing asparagus farms. This assistance covers the supply of asparagus crowns (seedlings), fertilizers, seed, tractor services and technical advice. The BFP also supplied fruit tree seedlings to outgrowers in order to enhance the supply of non-asparagus farm products.

Since commencing its activities in 1984, BFP—in collaboration with the Crops and Extension Division of MOA—has expanded the total hectareage of asparagus cultivation from 50 hectares in 1984 to 100 hectares in 1987. This enhanced cultivation enabled the BFVC to process over 500 tonnes of asparagus in 1987.

Ministry of Agriculture

The Ministry of Agriculture (MOA) is involved directly in the asparagus production programme, especially its Crop Division and Extension Division. The Ministry had undertaken to safeguard the supply of adequate amounts of the raw material and to stimulate the production of the diversified raw material product requirements of a cannery with expanded processing capacity.

Price determination

The price of asparagus to the outgrowers is determined once a year at the beginning of the harvesting season. The price is fixed according to the prevailing world market prices. Outgrowers have had no control over the price determination since they had no basis for demanding a different price. In addition, BFVC is the only buyer of asparagus in the country. However, as Setlabocha Co-operative is now represented on the Board of Directors of BFVC it has access to the information held by the company and is getting into a position where it can negotiate a higher price for its members. The 1988 season price for asparagus spears is M 1.65 per kilogram, having risen from M 1.45 in 1987 and M 1.00 in 1986. The farmers are paid once

a month during the harvesting season, from September to December. BFVC pays one cheque to the co-operative for all the outgrowers, and the co-operative pays the individual farmers.

In addition to the fixed price paid to the outgrowers they also receive an extra payment designated "bonus". The bonus is paid around March, after BFVC has sold asparagus on the European markets. The rationale, as stated by the general manager of BFVC, is that at this time the company knows whether it has made a profit or not and what proportion of that profit can be passed on to the farmer and what proportion needs to be ploughed back into its productive activities. Although in the past the bonus appeared to be an arbitrary gift to the outgrowers, this will change since Setlabocha Co-operative is represented on the BFVC Board and can negotiate what part of the profits should be paid to farmers as bonus.

The Asparagus Processing and Marketing System

Basotho Fruits and Vegetables Cannery (Pty) Ltd.

The canning factory is located at Masianokeng, Maseru District, within a hinterland that was identified by the MOA as most suitable for asparagus production. The cannery was registered in 1980 as a company named Basotho Fruits and Vegetable Cannery (BFVC) when the pilot asparagus canning project was taken over from the MOA by the LNDC under the Ministry of Commerce and Industry. BFVC is a wholly-owned subsidiary of the LNDC. The most important activity of the cannery is procuring asparagus spears from outgrowers and preparing and processing them for marketing as fresh or canned asparagus or as asparagus soup. The main destination for the exported asparagus products is Western Europe, in particular, France, Belgium and the Federal Republic of Germany. BFVC is the sole marketing and distribution channel for all asparagus cash crop production.

The expansion of the cannery processing capacity has been the main concern of the LNDC and the Ministry of Agriculture ever since the 1979/80 asparagus season when the processing capacity of the cannery had reached its limits. This precipitated a bottleneck which resulted in some outgrowers abandoning asparagus production. The expansion of the cannery's processing capacity to its present level of 2,250 tonnes per annum has been financed by the UNDP's Capital Development Fund with supplemental funding from the EEC-Counterpart

Food Aid Funds.³²

The rationale for expanding the processing capacity of the cannery was the seasonality of the asparagus harvest, which occurs from September through December. The 2,250-tonne capacity is to cover the peak harvesting season.

The key challenge to the cannery's management is the need to cover overhead costs and at least break even during the asparagus off-season of January to August. The commercial viability of BFVC clearly depends on:

- the viability of adequate, reasonably priced, agricultural raw materials
- competitive access to international markets or domestic and regional markets³³

In order to make the BFVC viable, the operations of the cannery have been diversified to include other product lines. With the end of the asparagus harvesting season, the cannery processes peaches, apricots and green beans. From June to July the cannery produces baked beans in tomato sauce. The total product range of BFVC is beans in sauce, green beans, peaches, peach jam, peach nectar, peach pulp, apricots and asparagus spears. Despite this diversification, the management of the cannery acknowledges that asparagus is the only profitable product of BFVC.³⁴

The legal status of BFVC

BFVC was accorded "pioneer industry" status under the Pioneer Industries Encouragement Act of 1969 on the recommendation of the LNDC. Through this Act, the Government of Lesotho can offer incentives to manufacturers operating in Lesotho through the Pioneer Industries Board. Although the Act was aimed at attracting foreign investors to Lesotho some indigenous manufacturing industries have been offered the status. BFVC gained this status on the basis that its operations qualified as manufacturing and it met the government policy objectives of creating employment, producing for export and using raw materials.³⁵

The status entitles a company to be exempted from company tax on its income for a period of six years or to get certain tax allowances for such expenditures as machinery, new buildings, building depreciation, and training allowance. These allowances can be as high as 145 per cent. Thus BFVC has been exempt from tax since 1983. As its status is expiring in 1989 it is in the process of applying for renewal.³⁶

The marketing scenario

The major market destinations of both canned and fresh asparagus are Germany, Belgium and France. According to both the management of BFVC and the EEC country mission officials, prices for asparagus in the importing countries are firm and likely to increase due to a decline in production in traditional exporting countries like Taiwan, and overall stagnation in production from European producers like Spain.³⁷ These developments provide marketing advantages for Lesotho asparagus which is exported during the European off-season.

The BFVC started to export fresh asparagus in October 1987 which, according to BFVC management, is very profitable. It ultimately exported 40 tonnes of fresh asparagus out of a total season production of 500 tonnes, most of which was canned or made into soup. The projections of the 1988 September-December season are that out of 700 tonnes of asparagus, about 100 tonnes will be made up of fresh asparagus. The market scenario is most favourable to a fledgling asparagus enterprise.

Key Factors Determining the Success of the Asparagus Outgrower Scheme

This study has identified several key factors which determine the form of contract farming in Lesotho: land and land-use patterns; the small-holder family model of production; agro-climatic conditions and choice of cash crop; effective extension services; and existence of market guarantees for the cash crop.

Land and land-use patterns

In Maseru District (where asparagus production has now become established) only 4.1 per cent of the District's 4,279 sq. km. is most suitable for crop cultivation. Land under cultivation per rural household is 1.52 ha., similar to land distribution in other districts. This 1.52 hectares usually consists of two or three distinct pieces of land. This fragmented land-use pattern has been successfully adapted to asparagus production where the established policy is that the average size of an asparagus plot is 0.24 hectares

This practice has enabled asparagus production to co-exist with food production since the household's other fields can be set aside for producing food crops like maize, beans and peas. The particular form in which asparagus production has been

adapted to the fragmented land-use pattern has resulted in a co-existence of cash crop production with food production.

The smallholder family model of production

Asparagus production has also been adapted successfully to the smallholder characteristics of Lesotho's rural society. The key feature of Lesotho rural households are:

- national average family size, or persons per rural household, of 5.03 persons
- national average area of land under cultivation per household of 1.29 hectares, very close to the average land holding size of 1.32 hectares
- average landholding size in Maseru District of 1.5 hectares
- women as *de facto* decision-makers at the farm level (due to the pervasive migratory labour system), playing a central role in the production of both food and cash crops

Entry into asparagus production is relatively easy for the average rural household, provided that there is an effective extension service offered by the cannery or the MOA that provides inputs and technical advice. In addition, the established practice of limiting the average land area planted with asparagus to 0.24 hectares ensures the intensive labour requirements demanded of the household to produce high quality asparagus. This production model has produced consistently high quality asparagus spears. The high quality of both canned and fresh asparagus exported by BFVC to Western Europe satisfies the asparagus consumer market, particularly in Germany and France.³⁸

Agro-climatic conditions and choice of cash crop

Agro-climatic conditions in Lesotho are not very favourable to intensive rain-fed crop production. The summer period, from October to April, is warm to hot with erratic rainfall. This is when much of the moisture needed by crops is supplied. The winter period, from May to July, is cold and dry with cold conditions setting in quite early. Drought spells are cyclical—every ten years there is a three or four-year drought period. In addition to inadequate rainfall, other climatic constraints to crop production include severe hail in the lowlands, frost, and low temperatures and snow in winter.

Given such agro-climatic conditions, the choice

of asparagus as a crop to be produced on the basis of contract farming was most appropriate since it is perennial and drought and hail resistant. The crop thrives even on marginal land regarded as unsuitable for food crop production. Such a hardy perennial crop considerably reduces the risk of crop loss and guarantees recovery of costs of establishing it. The cost of establishing a hectare of asparagus in the first two years is M 1,588. This is before any crop can be harvested. A field three years old is in its first year of production and produces an average of 2.5 tonnes per hectare. With good land husbandry, a yield of five tonnes can be expected annually from year four to year thirteen. In comparison, green beans produced under irrigated conditions have an annual yield of 3 tonnes per hectare.³⁹

Effective extension services

A key factor in the success of asparagus contract farming is the availability of effective extension services. The two institutions which provide extension services for the horticultural production programmes are MOA through its crops and extension divisions, respectively, and BFP, the LNDC subsidiary that runs the 200 hectares nucleus farm and also provides extension services to asparagus outgrowers. Both the MOA and BFP have been explicitly charged with facilitating the production of asparagus and other horticultural products to be used as raw material inputs for the cannery.⁴⁰ The MOA has a large extension service which employs more than 250 extension officers. It also has a Farmers Training Section with five Farmers Training Centres and an agricultural information service which issues printed information and runs a farmer broadcasting service on the national broadcasting service. Some of the most experienced extension officers from MOA have been seconded or attached to the cannery and BFP in order to complement BFP's extension personnel and agronomists.

The combined extension service effort of the MOA and BFP has been fairly effective in establishing and expanding the asparagus production programme. Such extension services are effective particularly in the following areas:

- ensuring the supply of tools, seedlings and other inputs and providing technical advice to outgrowers
- ensuring a high standard of quality of asparagus spears
- safeguarding the fertility of the soil and pre-

venting the depletion of soil nutrients by ensuring the application of organic and chemical fertilizers

Market guarantees for asparagus

A key determinant of the viability of the whole asparagus production and marketing programme has been the existence of favourable market conditions for asparagus in Western Europe, where it is consumed as a luxury food item. Prices for both canned and fresh asparagus are steady and even increasing due to a decline of production from traditional asparagus exporters and overall stagnation of production in Europe. The successful experimentation by BFVC with exporting fresh asparagus—which is preferred by consumers over the canned type—promises to make the whole enterprise even more profitable.

It is important to note that Lesotho's asparagus exports enjoy a seasonal market advantage since the peak harvesting season of September to December coincides with the off-season phase of other asparagus producers. The cannery, through the LNDC, is also taking advantage of the preferential trade arrangements under the EEC-ACP Lomé Convention, by applying for a waiver of customs and excise duties within the EEC.⁴¹

These are the key factors that determine the form that asparagus contract farming has taken in Lesotho and the viability of the enterprise both at the farm level and the level of the cannery. Underlying all these factors, however, is the availability of concessional aid resources which significantly subsidize both the production of asparagus and the expansion of the processing capacity of the cannery.

Evaluation of the Asparagus Scheme

Evaluation of the asparagus scheme's performance is based on the main actors—the government, the outgrower and the firm—achieving their objectives

Government objectives

In initiating the asparagus scheme under the TBRDP, the Government of Lesotho was pursuing the following policy objectives:

- increasing the contribution of the agricultural sector to national income
- creating employment for the rural population

- increasing the incomes of the smallholder farmers
- increasing national foreign exchange earnings through producing and exporting a high-value crop

These objectives have in large measure been achieved. Although the BFVC registered a loss from 1980/81 to 1983/84, it started to show a profit from 1984/85. In the 1987/88 season BFVC made a profit of M 200,000. If it is seen as a profitable enterprise within the LNDC parastatal, then it may be argued that it is contributing to national income.

Government objectives have probably been best realized in terms of employment. Asparagus production has created on-farm employment by increasing the working time of family members by twenty-four work days per household.⁴² Our survey showed that in 75 per cent of the households in the sample, all members of the outgrower's family participated in the asparagus production. Taking the average family size in Maseru District of five persons and assuming that all the family members participate at least during the peak periods of weeding and harvesting, the present 1,000 asparagus outgrower farms should be providing on-farm employment for up to 5,000 people. Without asparagus, these people would at best be underemployed, or engaging in subsistence farming.

In addition, some outgrowers employ casual wage labour to assist—largely in weeding and harvesting. Thus the survey showed that just over 50 per cent of the outgrowers in the sample employed labour. These wage earners are the rural lumpen proletariat who have neither land nor regular employment. They earn an average of M 2.00 per day.

The employment objective has also been met through hiring almost exclusively female labour by the BFVC factory for processing and canning. Since these women form an important part of the asparagus project, their employment is treated in greater detail later. Incomes of at least a section of the rural population have certainly been increased.

The objective of increasing foreign exchange earnings has been achieved in that the production and processing of asparagus requires minimal foreign exchange since most of the machinery and other equipment used comes through concessional aid from the UNDP and EEC. It is estimated that the ratio of the project-induced imports to exports at full production is 1:2.5. Moreover, imports here include those from South Africa which is within the

same currency zone.

Outgrowers objectives

The major objective of the outgrowers in joining the asparagus scheme was to derive income from their produce. Improvements of farming methods through extension services may be another objective. It is clear that outgrowers have increased their on-farm incomes through participation in the scheme. Unfortunately, our survey was unable to get exact figures of incomes derived from asparagus production as the outgrowers interviewed were either reluctant to disclose their incomes (presumably for fear that it would affect their tax assessment) or they were genuinely unable to remember what amounts were specifically earned from asparagus sales.

The latter explanation is more likely since these illiterate or semi-literate farmers tend not to keep records of their incomes from various sources (such as selling farm products other than asparagus, remittances from migrant relatives and beer brewing).

The data do show that 76 per cent of those interviewed put money incomes as the only benefit from the scheme. Many mentioned their ability to pay school fees for their children. According to EEC calculations, earnings from the Maseru District average smallholder farm of 1.52 hectares without asparagus are M 276, while earnings from the same size farm with asparagus come to M 1,158.00, about four times as much.⁴⁴

It is difficult to measure the outgrowers' improvement in farming techniques from the survey since there are many factors affecting the success or failure of non-asparagus crops in addition to technical knowledge and good husbandry.

One incidental benefit of the asparagus contract farming scheme to outgrowers and the community at large is the introduction of clean water at the village collection centres by the cannery and now by the BFP.

Main Areas of Performance Regarding the Scheme

Food production

Food production is not an objective of the asparagus outgrower scheme since asparagus is neither an indigenous food crop nor a traditionally imported foodstuff which could replace imports if produced locally. Asparagus was specifically aimed at the export market. However, a small amount of asparagus is bought by larger local hotels which are

mainly patronized by tourists, and some locally-based expatriate residents.

What is relevant is that asparagus production has not undermined food production. Returns from traditional grains on the 0.2 hectares occupied by asparagus would be negligible. For instance, revenue from beans planted on 0.3 hectares is estimated at M 36. Thus it is worthwhile for a farmer to grow asparagus on the 0.2 hectares of a plot and continue to produce traditional grains—maize, beans or sorghum—on the rest of the land. In any case, it would require at least four to five times as much land as farmers presently possess to grow enough grain to take them through from one season to another. Among the outgrowers interviewed, only 56 per cent said they produced enough food stuffs to last them from year to year. Of those who do not have enough, 70 per cent have to purchase the balance while the rest have to depend on gifts or food loans from neighbours and relatives.

The other question relevant to food production is whether growing asparagus impinges on the labour time necessary for food production. The research showed that the only asparagus activities requiring a substantial share of the growers' labour time are weeding and harvesting. Whereas weeding could take a substantial amount of labour time, harvesting is done during the first three hours after sunrise so that the rest of the day is available for the farmer to attend to food crops.

As far as the effect of asparagus growing on soil fertility is concerned, we have not been able to confirm whether the fact that asparagus is harvested from the same plot of land for eight to ten years without replanting exhausts the soil. However, it would seem certain that retaining soil fertility would depend on effective application of organic and chemical fertilizers.

Extension

It was not easy to determine the effect of extension services on the farmers involved in the asparagus scheme. Extension services to the outgrowers are provided by government (MOA), BFP extension officers and BFVC agronomists. These extension officers hold induction seminars to inform farmers of what is involved in asparagus growing, the need to follow instructions for caring for the crop and the use of fertilizers and other necessary inputs. They are also involved in selecting farmers who may join the outgrower scheme.

The survey revealed certain problems relating to extension services. First, there appears to be a possibility of conflict of interest on the part of the

MOA extension officers/agronomists. They are as concerned about the requirements of BFVC for profit maximization as the company's own extension officers. This is likely to lead to subordination of other equity or development-oriented issues faced by small-scale farmers. Most outgrowers interviewed were not aware that it was MOA extensionists/agronomists who visited them. Thus 74 per cent of those interviewed said they had never been visited by a government extension officer. Yet the extension officer best known to most farmers, Mr. Ntsoti, is a government employee. The only explanation is that outgrowers regard him as a company representative. This view was confirmed when outgrowers were asked: Which of the two, government and company extension staff, were better. Of the respondents, 92 per cent were unable to answer the question.

It follows that if the outgrowers have problems with the processing company, they cannot confide in the extension officers, even the MOA ones. Yet mediation between outgrowers and the agri-business concern should be one of their functions.

A related problem is lack of follow-up by extension staff. A senior member of the outgrowers' co-operative told the interviewing team that extension officers merely give lectures and do not follow up these instructions with farmers in the field. He suggested that the extension staff should get involved in the practical operations in the fields with the growers. However, the BFP, with its emphasis on improving the farming abilities of outgrowers, is presently fielding more extension staff and there may be improvements in this respect.

Extension staff seem to exercise undue power and patronage over outgrowers. The fact that they have the power to accept or reject the application of a potential outgrower makes the outgrowers feel indebted to the extension staff responsible.

Further, the extension staff do not appear to explain the rights of outgrowers, which they should do. Instead, they issue instructions to them and make the whole transaction appear as a favour to the outgrowers.

Finally, whereas extension may have been successful in getting farmers to use fertilizers and insecticides to keep their asparagus fields free of weeds and produce a high quality of crop, it is not clear whether the acquired farming techniques have been employed in the production of other crops. There is little evidence of the farmers in the schemes engaging in intensive agriculture other than asparagus.

Input supply

All outgrowers are required to follow the instructions of the MOA/BFVC agronomists as to the farming methods to use including the use of a specific type of fertilizer. Thus the survey of outgrowers showed that 100 per cent of them used fertilizers provided on credit by the company (BFP). Only one out of 246 outgrowers interviewed claimed he used non-company fertilizer.

The supply of inputs, other than seedlings, has recently been taken over by the Setlabocha Co-operative. Unlike previously, when the farmers had no option to purchase their inputs outside the BFVC/BFP network, Setlabocha Co-operative now buys the fertilizer from Co-op Lesotho at a lower price. The fertilizer is still provided on credit to outgrowers. Other items provided on credit by Setlabocha, are the asparagus-specific implements. Gone are the days when these things were heavily subsidized by the TBRDP.

Setlabocha deducts the money owed for the inputs and implements from the outgrowers' sales at the rate of 0.55 maloti per kg. until the debt is paid off. M 0.1 per kg. is paid back to the outgrower in January. This is a form of compulsory saving. The aim of the co-operative is to help its members by providing the inputs, implements, and services at the lowest prices. However, the outgrowers do not know how much they owe for these things or how the rate of deduction is arrived at. It would be in the interest of both parties if these issues were explained to the outgrowers.

Evaluation of BFVC/BFP Combine

The following evaluation of the performance and viability of the asparagus production, processing and marketing complex, (the BFVC/BFP combine) is made within the context of the major objectives of the parent corporation, the LNDC, itself an investment promotion corporation owned by the Government of Lesotho.

The BFVC and the BFP are legally registered separately as companies and are therefore audited separately on behalf of the LNDC at the end of every financial year. However, they share senior management of the BFVC. The major objectives of the LNDC in establishing these two companies are quite clear. BFVC was established in 1980 when the pilot asparagus project was taken over from MOA by the LNDC. The key objective was that the cannery should provide a processing and marketing channel for the established asparagus producers. The processing capacity of the cannery plant

had to be expanded in order to handle the increasing production of asparagus spears by outgrowers. With the assistance of the UNDP/UNCDF and the EEC, the processing capacity of the cannery plant is now 2,250 tonnes.

Such an expansion in processing capacity entailed an accompanying expansion in asparagus production and other agricultural products in order to safeguard raw material supplied to the cannery. A nucleus farm was therefore established under the UNCDF project, cultivating an area of 200 to 250 hectares adjacent to the cannery. It is managed through a capital-intensive strategy using tractors, machinery and extensive irrigation facilities. In 1984 a separate company was floated by LNDC to specifically take care of the nucleus farm. This became the agronomic affiliate of BFVC, concerned with producing beans, peaches and apricots for the cannery and servicing the asparagus outgrowers.

The central question is how successful has this BFVC/BFP combination been in generating an economic surplus. Is it an economically viable or profitable enterprise? In seeking to answer that question, we should make the following preliminary observations. Firstly, the costs of establishing asparagus in the outgrowers' fields are highly subsidized by donors (UNDP/UNCDF and EEC). Secondly, the costs of establishing and expanding the cannery plant are also highly subsidized by the same donor-funded schemes. Thus, if the various subsidies are properly taken into account, it is very doubtful whether the BFVC/BFP would show a positive rate of return on old investments. This means that any profitability that may be recorded by the cannery should be considered within the context of concessional aid flows that the LNDC and the MOA have been so successful in attracting to Lesotho.

If we then examine the BFVC as a functioning economic concern we find that the cannery buys fresh, cleaned and wet asparagus at the village collection sheds at a price that will invariably guarantee a profit after processing and marketing. According to BFVC management, the cannery's pricing policy is determined by company profitability concerns and incentive considerations to the asparagus outgrowers.⁴⁵

The cannery has been taking advantage of its ability to impose prices and of favourable EEC markets to guarantee itself a profit, particularly since the 1984/85 season. It generated a profit of M 191,502 and M 51,536 in 1985/86. Accumulated losses were reduced to M 96,736.

A consultant's report on the BFVC maintains that if profits stayed at the 1985/86 average of M 121,519 the cannery would break even by March 1987 and pay off the investment of M 1,364,107 (as of March 1986) in just over eleven years, from 1987 to 1998.⁴⁶ Since 1987, the cannery's affiliate BFP has been exporting fresh asparagus to EEC markets which has proved to be even more profitable. The announced profits for fiscal 1987/88 were M 200,00 for BFVC.⁴⁷

It is important to note that asparagus is still the only profitable product line of BFVC. Other products are produced only if they contribute towards paying overhead, particularly during the asparagus off-season.⁴⁸ The processing of other products does not guarantee full utilization of capacity and therefore does not ensure profitability due to problems in raw material supply and marketing. The cannery's non-asparagus products compete with similar South African products for the domestic market. In any case, the agricultural sector in Lesotho (including the nucleus farm) is unable to supply the requisite quantities of these products.

In conclusion, although BFVC and BFP are subsidiaries of LNDC, they have not fully experienced the effects of agri-business normalization. There has not been any significant shift—particularly with respect to BFP—from promotional and concessional policies to strict profit and loss modes of operation. Presently, BFP, as the agronomic branch of LNDC, is implementing the EEC-funded asparagus expansion programmes whose aims are to subsidize the costs of establishing asparagus for 2,550 households with the ultimate objective of supplying 2,250 tonnes of fresh asparagus to BFVC for processing.

The key challenge facing the LNDC is to guarantee the viability of the BFVC/BFP after the donor-funded promotional project phase has ended.⁴⁹ The LNDC is presently considering various organizational alternatives for BFVC/BFP, due to what is regarded as the non-profit orientation of BFP whose original role was to extend agronomic services to asparagus outgrowers, and promote other horticultural products. Whereas BFVC is pushing to be allowed to formally and legally absorb BFP, which it controls in practice, the outgrowers, through their organization—the Setlabocha Co-operative Society—want the BFP to remain autonomous, with Setlabocha being allowed a substantial measure of participation.

Workers at the Cannery

One of the objectives of the Lesotho government and its donors in starting the asparagus contract farming scheme was to create employment at the processing stage. One of the perceived successes of the BFVC as a developmental enterprise is that it has created much-needed employment for rural women who live in the hinterland of the canning factory. It is therefore important to evaluate the performance of the BFVC in this respect. The company needs labour to load and off-load asparagus, to wash, peel, and otherwise prepare for canning and packing for export. Much of the labour requirements are seasonal—September to December. However, from January to about May, the cannery needs some labour for processing fruits for jam, and green and dry beans.

In September 1988, the research team carried out a small sample survey of the canning factory. Fifty-six women and one man (a security guard) were interviewed. It was difficult to interview the women since management would not agree to their being interviewed on the premises and they would not have been free to say what they wanted. It was equally difficult to interview them in their homes as they work in shifts on all days of the week including Sunday. However, it was felt by the researchers that a sample of about 50 out of the total of 340 could give a good idea of the nature of employment at the cannery.

The survey found that the women employed at the cannery were largely between twenty and forty years old (79 per cent). These are women in the prime of their lives who have personal and family responsibilities that require a regular cash income. Fifty-seven per cent were married, 13 per cent divorced or widowed, while 29 per cent were single. Even more important regarding the need for income, it was found that 86 per cent of these workers had children who were fully or partially dependent on them.

A large number of them (61 per cent) were unhappy about the working conditions, and particularly the low wages and the casual nature of their employment. They stated that they could not afford to go seeking employment in places far away from home.

The company employs about 340 casual labourers during the peak period of three months, while for the other five months or so, labour is reduced to about 40. These more regular workers are apparently paid a fraction of their wages for the three to four months they are out of work to enable them to

have a continuous income. This, however, is said to be gratuitous on the part of the company since legally, being casual workers, they would not be entitled to any pay during the period when they are not at work.

No written contracts are issued to the seasonal labourers or to the "regulars". The workers merely register their names and are verbally informed of the terms of their employment, such as wages and hours of work. As far as wages are concerned, company policy has been to pay the statutory minimum wage, although currently it pays slightly more. In November 1987, the BFVC revised the wages to M 0.95 per hour for cannery workers, following the new minimum wages gazetted by the government. Some workers interviewed stated that the increase was a result of a strike which led to wages rising from M 0.68 to M 0.95 per hour.

Workers have complained about low wages but the company feels no obligation to pay more than the statutory minimum wage. The company says that wages are reviewed after realizing net income from exports. This, however, is unsatisfactory in that wages cannot depend on the variable margin of profit. There should be a regular systematic method of determining wages through collective bargaining.

As far as working hours are concerned, the company again claims to stick strictly to the law. The workers are grouped into three shifts, the first one starting at 6 a.m. and working for eight hours a day. Thus, the canning factory is able to operate 24 hours a day with three shifts. Previously there were only two shifts and the workers used to put in a few hours of overtime, which prolonged the working day to the maximum of 12 hours (within the limits set by the Employment Act).⁵⁰ However, the workers interviewed complained of the strain of working too many hours in a job where they had to stand all the time. Further, they complained that they were paid the same rate for Sundays as they are paid on other days. Management explained that clocking cards were used to be sure of the number of hours worked by each employee. However, it is not clear whether the workers are paid the statutory overtime wage of one and a quarter times normal hourly pay, or twice the normal rate when they work on public holidays, as required by the Employment Act.⁵¹

There is no active trade union organization at the cannery, although the Lesotho Food Canning and Allied Workers Union is meant to serve this group of workers. The reason for lack of organization is clear. Since the workers are casual labourers

paid on an hourly basis, liable to be dismissed at a day's notice, they are difficult to organize. Organization needs fairly stable labour. Not only are these workers casual labourers, but they are seasonal. A union official who was interviewed gave the same explanation for the lack of strong union activity at the cannery. Some of the few workers who stay for all or most of the year at the cannery belong to the union. The union official claimed that 60 per cent of the "regulars" were members of the union. Nevertheless, even those who are members of the union say they are afraid of being active as management makes them aware of the army of unemployed waiting at the gate to take their place. The union official claimed that management was very arrogant towards union officials and was not interested in collective bargaining over issues affecting union members. However, the union has managed to get one dismissed supervisor reinstated, and one security guard has been paid his terminal benefits by the company.

The conditions of work are not the most congenial. Those who prepare asparagus work under cold and wet conditions to keep the asparagus fresh. Their hands are constantly in icy water and they complain of stiffness of the joints. Although, there is a company doctor, there is no health service for the workers. It is reported in the survey that accidents occasionally take place: workers fall and cut themselves on the machines, get burned, or pass out because of dizziness resulting from standing for hours. Management admitted, during an interview, the need for regular medical checks on the workers and promised to work on the matter. The lack of a health service may be explained again in terms of the nature of the labour in question. Since most of the workers do not stay longer than three months in a year the Company does not feel an obligation to take care of their health as it does for the higher rank, long-term employees. The workers also do not complain because if declared unfit, for whatever reasons, they would lose their jobs.

One noticeable feature of the factory employees engaged in the processing of fruits and vegetables is that they are almost exclusively female.⁵² Kusterer, in his study of asparagus canning in Peru also found that almost 90 per cent of the canning workforce was female. When questioned on why this is so at Basotho Cannery factory, a representative of BFVC management said women are very good at the canning business. It was said that in their homes they can peaches and apricots, that peeling is almost natural to them since they do it all the time and are very fast. The idea of the woman's place being

in the kitchen is still entrenched in Lesotho as in many other parts of the Third World. The few male labourers at the factory are engaged in lifting heavy loads, loading and unloading.

However, there are other factors which encourage the female-based composition of the workforce. Women are assumed to be easier to manage and more difficult to organize industrially. In addition, in Lesotho they have many financial responsibilities that make industrial action almost unthinkable. Since a large proportion of Basotho male labour is employed in South African mines, it is the women left behind who form the reserve army of cheap labour for agri-business.

Opportunity for Participation of Outgrowers:

The Co-operative

Setlabocha Farmers Co-operative Society caters specifically to the interests of the asparagus outgrowers. It was started in 1979 as a voluntary association of asparagus farmers, formed with the encouragement of the TBRDP which was at the time managing the asparagus pilot project. According to one of the founding members, Setlabocha was formed with the expectation that it would take over the assets of the pilot project, including the canning plant itself, the tractors and the buildings. This expectation explains the emphasis put on scientific production of cash crops for export in the by-laws of the association. As it turned out, the processing aspect of the pilot project was handed over to LNDC, while part of the premises were handed over to Co-op Lesotho.

In 1983, as the BFVC became established as a commercial agri-business concern, outgrowers felt they needed a stronger organization capable of negotiating with BFVC. In November 1983, Setlabocha Association was registered with the Registrar of Cooperatives as a Co-operative. Its by-laws list a number of objectives including to:

- promote production of a selected cash crop
- expand cash crop production
- increase yields through modern scientific methods
- improve quality for overseas markets⁵³

Setlabocha Co-operative was formed with the aim that it should eventually manage the extension

aspect of asparagus growing. The current struggle between BFVC and Setlabocha over the control of BFP, the extension wing of BFVC, should be viewed in this context.

Organizational structure of Setlabocha

Setlabocha is managed by an executive committee of fifteen members elected by an electoral college consisting of executive committees of village branches of the co-operative.

The President, Treasurer and General Secretary form the executive committee, whose terms of office are five years. This rather long term is justified by the members of the executive on grounds of continuity and the need to acquire experience in running the co-operative. Membership of the co-operative is open to asparagus outgrowers on payment of the 10 maloti fee.

Functions of Setlabocha

Setlabocha performs the important function of acting as the agent of the outgrowers in their dealings with the BFVC. It collects the asparagus of the outgrowers from the village collection centres, takes it to the cannery gate, and ensures that the produce of each outgrower is weighed and the weight correctly recorded.

The second major function of Setlabocha is to negotiate on behalf of its members with BFVC over matters such as the prices of the product, the bonus and the asparagus quality. For instance, an issue regarding quality is that third class (green) asparagus which used to be accepted for purposes of making soup is no longer accepted, and white but hollow or tubular asparagus (pompo) is not accepted. Setlabocha is supposed to negotiate on what can be done with this produce which is said to be unsuitable for export. Setlabocha also negotiates with BFP over transport and traction charges to farmers.

Thirdly, Setlabocha is presently involved in providing extension services to its members. It supplies fertilizer and tools such as wheelbarrows, trowels, knives, basins and brushes. These items were originally provided at highly subsidized rates under the TBRDP and UNDP/FAO phases. The subsidy has now been withdrawn and Setlabocha deducts the costs of these inputs from the farmers' sales.

The performance of extension services by Setlabocha has made the job of MOA and BFP extension staff much easier. Setlabocha explains that it must get involved in imparting technical knowl-

edge to its members to save their members from making losses. Members also expect that once they pay their M 10 subscription, Setlabocha will ensure that their produce is not rejected by the company. Thus, Setlabocha will ensure that outgrowers understand the preconditions for a quality product. Even the BFVC management expects Setlabocha to monitor its member's produce.

Setlabocha is important to the processing firm in terms of providing extension and reducing administrative costs. It is also beneficial to the firm in that it institutionalizes the relations between the firm and what would otherwise be a disorganized, inarticulate group of farmers. Kusterer has observed with relation to his Peru study that "the association has been mutually beneficial since it legitimizes grower concessions almost as it represents grower demands".⁵⁴

It is probably the realization of this dual role of a farmers' co-operative that has led the EEC to require that, as part of its asparagus production expansion aid package, the outgrowers' organization should be represented on the governing board of BFP and BFVC and should be able to purchase shares in the company. Setlabocha is already represented on the governing boards of both BFVC and BFP. It is expected that this participation in decision-making will minimize potential areas of conflict between outgrowers and BFVC.

Evaluation of Setlabocha's representative role

Since Setlabocha handles the sales and payments for asparagus purchased by BFVC, all outgrowers are forced to become members of the co-operative. However, not all outgrowers seem to know the role and importance of the co-operative. Whereas a substantial majority of outgrowers interviewed in the survey knew of the existence of the society (71 per cent), those who did not know (29 per cent) are quite a substantial number. This is rather surprising considering that all sales and payments are done through Setlabocha. It seems that in the past the co-operative has served more as a communication channel between the firm and the outgrowers than as a collective bargaining tool.

Only 56.5 per cent of the outgrowers thought the organization was useful to them, although some did not seem to appreciate the nature and role of a farmers' co-operative. For instance, a number of respondents stated that the society was useful because it paid a certain amount for burial expenses when a member or a member's relative died. Others thought the society was there to collect money from

members who could then help each other in times of trouble. Thus the objective of collective bargaining vis-a-vis the firm did not feature as a priority, if at all, for the members.

Whereas the leadership of Setlabocha has, from its inception expected to have a greater role in the production and preparation of asparagus for export, its membership does not seem to want it to assume tasks performed by BFVC. When asked whether they would like some of the tasks hitherto performed by the company to be performed by the co-operative, 54 per cent of the outgrowers interviewed answered in the negative, 21 per cent were prepared to let the co-operative do some of the tasks, while 25 per cent did not know.

These figures suggest a lack of confidence in Setlabocha, or at least lack of politicization of the membership, neither of which reflects well on the co-operative. In an interview, a senior member of Setlabocha leadership admitted that the membership was not sufficiently conscientized but attributed this to the fact that Setlabocha was formed by a small group of the more enlightened farmers with specific objectives, rather than as a grass-roots organization. The leadership was still trying to educate the mass of outgrowers on the more important issues relating to asparagus production.

Despite the problems of organization faced by Setlabocha, the idea of a strong outgrowers' organization is important, if not indispensable. More frequent contacts between the leadership of the co-operative and the outgrowers at the village level is necessary to make Setlabocha effectively representative. It is also suggested that the governing board of BFVC be expanded to increase the number of Setlabocha representatives. The present "army" of participating but non-voting observers from LNDC and BFVC normally present at board meetings should also be reduced to a minimum to avoid undue influence on the proceedings of meetings.

In conclusion, to promote the rural development objective of self-reliance, farmers should be encouraged to manage agricultural production and the marketing of their produce through their organizations. With more experience in financial and administrative matters, therefore, Setlabocha should be given a greater role in managing the production and marketing of asparagus.

Constraints to Replicability

In discussing prospects for replicating the asparagus contract farming model, it is important to initially establish whether this example can be

termed a success or a failure in the context of Lesotho's development efforts. It is interesting to observe that the asparagus production and processing scheme is commonly cited as one of the most successful examples of agricultural development in Lesotho. The success is viewed from the production, processing and marketing perspective. The elements of this success are the good quality of the asparagus spears processed by BFVC, at the factory gate, processing stage and final destination.⁵⁵

This asparagus production and processing model can be regarded as a qualified success with certain specific features. Some of these features may constrain the replicability of the model. The most significant factor is the availability of concessional capital resources which have been invested in both the asparagus production programme and in the cannery plant. The cannery, whose present processing capacity is 2,250 tonnes, has been financed by the UNCDF and EEC Counterpart Food Aid Funds, which have also provided for technical personnel.

At the production level, the UNDP/FAO and now the EEC have significantly subsidized the costs of extension, necessary infrastructure (roads, collection sheds, bore holes, etc.) and technical personnel. The MOA has also subsidized part of the extension services by seconding or attaching its most experienced agricultural extension officers to the asparagus scheme to service outgrowers.

We have already observed that as a cash crop, asparagus is unique in many respects. As a durable perennial crop it virtually eliminates the risk of possible crop loss and therefore guarantees returns on investments if good husbandry is exercised.

At the marketing level, asparagus which is exported to Western Europe enjoys favourable market conditions.

These are the specific features which make the asparagus production and processing scheme to be a qualified success. Even if the scheme does not satisfy strict economic criteria, it would seem to be most attractive from the perspective of Lesotho, given the ability of the Government of Lesotho to attract considerable flows of concessional aid and resources.

In the original UNCDF project mission report, the rationale for expanding the capacity of the cannery was that it would also process particular crops other than asparagus: green beans, Brussels sprouts, onions, sweet corn, peaches, apricots, soft berries, baby carrots, beetroot, potatoes, dry beans and dry peas.⁵⁶

Among those crops the cannery is producing

and processing are beans in sauce, green beans, peaches, peach jam, peach nectar and peach pulp. None of these crops are produced under contract between the BFVC and outgrowers. Some of the crops are grown on the BFP nucleus farm on a highly capital-intensive basis. Yet in spite of the fact that the costs of running the nucleus farm are highly subsidized, their contribution to BFVC's profitability is not significant. Asparagus is still the most profitable product line of the cannery.

In conclusion, prospects for replicating the asparagus production model of contract farming to other horticultural crops are not very bright given the functioning of the model in the context of Lesotho.

Notes

1. IBRD, *Lesotho Agricultural Sector Review*, Report no. 5866-ISO (September 1986), p. 2.
2. Ibid., p. 2.
3. The establishment of the LNDC in 1967 was undertaken following initiatives and overtures by the South African white business establishment which sought an institutional framework to facilitate joint Lesotho Government/LNDC/RSA business ventures in Lesotho. The LNDC is a parastatal corporation.
4. The significance of SACUA funds as a source of Lesotho Government revenue was only realized in the 1970s and 1980s.
5. Three five-year development plans have been published by the GOL for the following periods 1970/71-1974/75; 1975/76-1979/80; 1980/81-1984/85. The fourth five-year plan for the period 1986-90 is still in draft form.
6. IBRD, *Lesotho Country Economic Memorandum* (1987), p. 15.
7. Ibid., pp. 15, 16.
8. Ibid., p. 14.
9. Agriculture's subsistence contribution to an average rural household is regarded as supplemental because off-farm wage remittances contribute more than 70 per cent of the income of rural households.
10. GOL, *Fourth Five-Year Development Plan*, draft (1987).
11. Ibid.
12. Ibid., p. 36.
13. Ibid., p. 36.
14. Ibid., p. 36.
15. IBRD *Lesotho Agricultural Sector Review* (1986), p. 25.
16. MOA, *Crop Production Strategies and Action Programmes* (1987), p. 3.
17. One of the principal researchers in this study, S. Santho, served as a member of the Land Policy Review Commission representing the National University of Lesotho.
18. Land and Policy Review Commission, *Land and Policy Review Commission Report* (October 1987).
19. GOL, *Fourth Five-Year Plan*, draft, p. 113.
20. MOA, *Crop Production Strategies and Action Programmes* (1987), p. 2.
21. The study was undertaken by a UNDP/FAO horticultural specialist in 1971.
22. The unit of Lesotho currency is the Maloti.
23. Thaba-Bosiu Rural Development Project, *First and Second TBRDP Quarterly Report* (April-September, 1975).
24. Ibid.
25. The UNCDF fund of M 1.9 million in local currency proved to be inadequate. Hence, EEC provided an additional M 1.6 million for expansion of the plantations, extension services and factory equipment.
26. Refer to financing agreement between EEC and the Kingdom of Lesotho, signed 22 July 1987.
27. R. Levin, "Contract Farming in Swaziland" in M. Neocosmos, ed., *Social Relations in Rural Swaziland* (Kwaluseni: Social Science Research Unit, University of Swaziland, 1987).
28. FAO, *The Kingdom of Lesotho: Assessment of the Food, Agriculture and Livestock Situation*. Report of the FAO Mission, OSRO no. 03/86/E (Rome: Food and Agriculture Organization of the United Nations).
29. IBRD, *Lesotho Agricultural Sector Review* (1986).
30. The idea of self-exploitation has been widely discussed. It has been adopted, for instance, by Buch-Hansen and Markussen, in "Contract Farming and the Peasantry: The Case of Western Kenya", *Review of African Political Economy* vol. 23 (1982).
31. LNDC paper on the proposed restructuring of BFP presented to the Board of BFP on 24/8/88.
32. The total amount of money provided by UNCDF and EEC is M 3.5 million (about US\$1.56 million). These are concessional funds which save the BFVC from borrowing from commercial money markets.
33. These observations are made by F. Baffoe in Baffoe and Associates, *Industrial Sector Study Lesotho*, vol. 3, p. 10.
34. Minutes of the Board of Directors of BFVC (24 August 1988).
35. D. Marbirizi discusses the investment laws of Lesotho extensively in "Policy and Law in Development in Southern Africa: The Case of Lesotho's Industrial Sector" (mimeo, April 1988).
36. Interviews with the BFVC Management in January 1988, and EEC officials in February 1988.
37. EEC Financial Proposal, no. VIII/385/87-EN (Brussels: EEC, April 1987).
38. The good quality of asparagus spears from BFVC has been confirmed by EEC officials in an interview with the researchers.
39. This is based on calculation notes for the EEC-financed Asparagus Expansion Programme.
40. This was made explicit in the third and fourth *Five-Year Development Plan* and in a UNCDF/UNDP-funded project that provided for the expansion of

- the processing capacity of BFVC.
41. Minutes of the BFVC Board (24 August 1988), p.3.
42. EEC Financial Proposal, no. VIII/385/87-EN (Brussels: EEC, April 1987).
43. Ibid.
44. Ibid.
45. Interview with BFVC General Manager, P. Mokhesi, September 1987.
46. Baffoe and Associates, p. 3.
47. BFVC Board minutes (24 August 1988).
48. Ibid.
49. The EEC expansion programme ends in 1992.
50. The Employment Act, Section 56 (3).
51. The Employment Act, Section 56 (4).
52. K. C. Kusterer, *The Social Impact of Agribusiness: A Case Study of Asparagus Canning in Peru* (Washington: United States Agency for International Development, 1982).
53. By-laws of Setlabocha Farmers' Co-operative Society, Registry of Co-operatives, Maseru.
54. Kusterer, *The Social Impact of Agribusiness*.
55. This view of success of the asparagus scheme is shared by MOA, UNDP, FAO and the EEC.
56. UNCDF Project Mission Report, Les/78/C32 (1982), p. 34.

Contract Farming in Malawi: Smallholder Sugar and Tea Authorities

J.S. Nankumba and B. Kalua
University of Malawi

Abstract

This study of the Smallholder Sugar Authority (SSA) in Nkhota-Kota District and the Smallholder Tea Authority (STA) in Mulanje-Thyolo District of Malawi was conducted from the 1986/87 to 1987/88 season. A survey was undertaken to examine the performance of the projects and isolate factors which lead to the results achieved, from which policy recommendations could be proposed. The survey was based on a census of all the growers in SSA and a target sample of 20 per cent of the growers in STA. Growers sign contracts with the authorities to grow the cash crop, they sell it through the authorities to the processing factories and they receive their revenue through the authorities. Both authorities benefited from their monopsony powers. Growers disliked the relative cane payment system (RCPS) for determining the sugarcane tonnage. Customary land tenure provided more opportunity for women and security of tenure among the growers as the authority found it difficult to envisage eviction.

Introduction

Tea is the major cash crop in the densely-populated southern region of Malawi. Both tea and sugar are major export crops of the country and are classified as "special crops" with smallholder production regulated by smallholder authorities. Smallholder authorities were established by the colonial legislature in 1963 under the Special Crops Act. The Act was amended by the independent republican Government in 1969 and again in 1972. The stated purpose of the Act was, and still is, to provide "for the development and marketing of special crops and for the establishment of Special Crop Authorities".

Under the Special Crops Act, the Minister responsible for agriculture may declare any crop to be a special crop if he is satisfied that its development should be promoted or fostered under the Act. The Minister is then obliged to establish an authority to promote and foster the special crops development in such areas as he may determine. An Authority is to be a body corporate, vested with all the normal powers and rights of a corporate body in Malawi.

When the special crop has been declared and the authority established, no person is allowed to grow, sell, barter or buy the crop unless he or she holds a valid licence to do so. Infringement of this provision makes a person liable to a fine, which may include an order that the special crop of the offender be forfeited.

Smallholder authorities in Malawi are statutory bodies and come under the control of the Department of Statutory Bodies. Smallholder authorities currently include the Smallholder Sugar Authority (SSA), Smallholder Tea Authority (STA), Coffee Smallholder Authority (CSA), and Kasungu Flue Cured Tobacco Authority (KFCTA). The authority boards have representatives from the Ministry of Agriculture, the Ministry of Finance and the growers themselves. Certain sections in the authorities' operations are financed directly by the Malawi Government and they submit their budgets to the Government for scrutiny. This study describes the SSA in Dwangwa in Nkhota-Kota District north of Lilongwe on Lake Malawi, and the STA in Mulanje-Thyolo District in the southern tip of the country, respectively.

The SSA is established to promote and foster the development of sugarcane grown by smallholders in areas to be declared by the Minister. The Authority has the power to make regulations to control the relationship between the smallholders and the management. The Authority effected the Special Crop (Sugarcane) (Licensing) Regulations in 1979. These regulations provide for temporary and permanent licences to occupy holdings in the settlement areas to be issued. The regulation also provide for the issuing of sugar growers' licences. These two types of licences are dependent on each other. The licensee undertakes not to lend or transfer the holding to any other person. The farmer undertakes to grow on the holding such acreage of

sugarcane as may be required by the Authority.

Smallholders must manage their holdings in accordance with the farming practices laid down by the Authority, and must maintain all irrigation canals, drainage channels and other works provided on the holding by the Authority. They should obey the instructions of the authority and are subject to warning or to court trial if they infringe the parent Act or the subsidiary regulations.

Smallholder sugarcane growing is supervised by the Smallholder Sugar Authority at Dwangwa in Nkhota-Kota District. The growers are grouped into thirty-seven blocks of fields and five settlement villages for administrative purposes. All cane plots are on "public land", which is sub-leased from Dwangwa Sugar Corporation (DSC) by the authority on behalf of the smallholder growers. All growers received some training in sugarcane growing for one season before being asked to enter into a contract with SSA. The backgrounds of the growers are diverse because they were recruited from twenty-three out of the twenty-four administrative districts of the country (no growers had come from Salima District).

The cane is sold to the DSC which sells the processed sugar to outside markets. To expedite the

repayment of credit the proceeds are channelled through the SSA to the smallholders. The SSA deducts all the costs associated with its services from the individual growers' gross income. The SSA receives 60 per cent of the proceeds and DSC receives 40 per cent. The growers are paid from the SSA's share.

The Smallholder Tea Authority:

Project development and experience

The Smallholder Tea Authority was established on January 20, 1967 under the Special Crops Ordinance to encourage the involvement of smallholders in tea production. Smallholder tea growing is supervised by the STA in Thyolo and Mulanje districts. The growers are grouped into ten blocks for administration purposes, with the tea plots being on either public land or customary land. Public land is typically land previously owned and cultivated by large-scale tea growers but bought off by the Government for re-allocation to smallholders. One result of this has been some noticeable differences between public land and customary land cultivation—which is often broken up by

Table 1: Annual Planting and Yields of Green Leaf

YEAR	MULANJE			THYOLO			TOTAL		
	Area planted (ha.)	Total area (ha.)	Yield Green leaf (kg.)	Area planted (ha.)	Total area (ha.)	Yield Green leaf (kg.)	Area planted (ha.)	Total area (ha.)	Yield Green leaf (kg.)
Pre-1969	84	217	89,110	13	71	1,107	97	288	90,217
1970	166	333	164,575	18	89	3,297	134	422	167,872
1971	159	492	396,593	20	109	8,823	179	601	405,416
1972	160	652	384,022	32	141	25,504	192	793	409,526
1973	103	755	695,534	32	173	45,936	135	928	741,478
1974	124	879	1,432,312	38	211	95,698	162	1,090	1,528,010
1975	145	1,025	1,547,422	45	256	149,233	191	1,281	2,299,583
1976	169	1,194	2,051,019	55	311	248,564	224	1,505	2,299,583
1977	106	1,300	2,579,004	79	390	307,194	185	1,690	2,886,198
1978	130	1,430	2,910,324	55	445	393,955	185	1,875	3,304,279
1989	85	1,515	3,436,081	36	481	520,906	121	1,996	3,956,284
1980	85	1,600	4,100,527	43	524	1,036,410	128	2,124	5,216,937
1981	71	1,671	4,603,988	32	556	1,319,113	103	2,227	5,923,010
1982	65	1,736	4,850,932	35	591	1,228,406	100	2,327	6,079,338
1983	1	1,737	5,483,557	8	599	1,502,380	9	2,336	6,985,937
1984	1	1,738	6,199,599	11	610	1,567,602	12	2,348	7,767,201
1985	1	1,739	8,291,068	—	610	1,917,908	1	2,349	10,208,976
1986	—	1,739	10,479,387	12	622	2,841,380	12	2,361	13,320,767

Source: Smallholder Tea Authority, 1987.

settlements and sometimes displays gaps among the tea bushes due to poor management.

When green leaf started to be harvested by smallholders the STA contracted with commercial estates to purchase the leaf for manufacturing into black tea. Owing to an increase in production volume the STA began constructing its own factory

in Mulanje in September 1973. Manufacture of smallholder green leaf by the Malawian Tea Factory Company Ltd. (MATECO) commenced in December 1974. Annual plantings and yields of green leaf and growers' annual earnings in both Thyolo and Mulanje areas from 1969 to 1986 have been modest successes on both a per hectare and per

Table 2: Growers' Earnings (Kwacha)

Year	Mulanje (k)	Thyolo (k)	Total (k)
1967	20	Nil	28
1968	2,099	34	2,133
1969	4,911	61	4,972
1970	9,071	182	9,253
1971	21,858	485	22,344
1972	21,165	1,406	22,571
1973	38,334	2,532	40,866
1974	79,915	5,267	85,182
1975	102,343	9,870	112,213
1976	135,650	16,440	152,090
1977	227,619	27,536	225,155
1978	256,644	34,597	291,241
1979	303,007	52,950	355,957
1980	368,656	91,395	460,051
1981	391,335	112,137	503,472
1982	460,762	116,711	577,473
1983	607,158	166,200	773,358
1984	1,449,567	359,472	1,809,039
1985	2,155,851	499,736	2,655,587
1986	1,257,526	340,966	*1,598,492

* Includes only the initial payment at the time of writing as the level of the second payment had not yet been approved.

Source: Smallholder Tea Authority, 1987.

Table 3: Pattern of settlement with proposals

Year	Number of smallholders					Plot size of cane per smallholder (ha.)
	Proposed		Actual			
	Settled	Cumulative	Settled	Left	Cumulative	
1978	30	30	29	Nil	29	2
1979	60	90	43	1	71	2
1980	110	200	85	2	154	2
1981	70	270	84	3	235	2
1982	60	330	61	2	294	2
1983	Nil	330	17	7	304	2
1984	Nil	330	2	Nil	306	2
1985	—	—	—	4	302	2
1986	—	—	—	90	212	2 & 4
1987	—	—	—	12	200	33

grower basis (Tables 1 and 2).

Smallholder Sugar Authorities:

Project development and experience

Project development and establishment at Dwangwa was initiated by Lonrho (Malawi) Ltd. which provided finance to develop the Dwangwa Sugar Company (DSC). The initial forty-three settlers of the SSA were former employees of the DSC. The major physical targets were only met at the Dwangwa Delta where 663 hectares of irrigated land was developed, leaving out the rainfed component. Although 330 smallholders were planned to be settled by 1982, by 1984 only 306 farmers had been settled. Soil variability on some plots was found to make them unsuitable for smallholder settlement. SSA farmed the balance of the plots as a commercial area. Table 3 shows the progress of smallholder settlement over time.

As a result of the substantial rise in the level of Lake Malawi, submerging part of the DSC estate, the DSC requested SSA to relinquish the original smallholder food and housing land to replenish their lost cane area. This would be in exchange for a larger site, but of poorer soils which could not produce sufficient food for the farmers.

The price of sugar was projected to rise, stabilizing in 1983 (Table 4). From 1980 to 1981, the world sugar price exceeded the price estimated. All profits from the high sugar price were distributed to smallholders without provisions against future price decline. From 1982 to 1984, the sugar price declined with a negative effect on smallholders' incomes and the domestic market failed to expand as expected. The Malawi Government was asked for assistance to meet development loans repayments and safeguard farmers' incomes. For three years SSA survived on the Government's subventions, contrary to the original objective for the establishment to be self-sufficient. The SSA Board's attempts to re-structure the authority meant canceling services such as cane transport and the mechanical workshop and building department which had not been contracted to DSC.

The number of smallholders has been reduced to 200. These farmers, seen to be hard working, had their cane area increased from 2 to 3 hectares each of a 600 hectare area, the balance being farmed by SSA as a commercial area. The Commonwealth Development Corporation (CDC) staff were replaced after training the local staff as they were an expensive component.¹

The growers' average net income rose steadily

from K 859 in 1979 to K 2,305 in 1981, with the minimum net income always above K 500.² From 1982 onwards, net income declined due to falling prices. This reduced average net income and some growers experienced negative incomes (Table 5). The Relative Cane Payment System Formular (RCPS) used to calculate cane tonnage for the growers was also a source of discontent. The system seeks to reduce the wide variations in incomes among growers due to factors beyond their control such as sub-optimal harvesting (by the authority) and soil type variations. The system tends to be regarded with suspicion by those growers affected negatively.

Methodology and Survey Results

The survey of smallholder sugarcane growers was based on a census of all 187 growers under the scheme. There were 4,550 tea growers under the STA in the Thyolo and Mulanje areas from which a target sample of 20 per cent were to be interviewed. The sample growers were selected systematically from the growers register. However, in order to take full account of possible effects of gender in grower performance it was decided to include as many female growers as practical. Since female growers were a small minority some male growers in the sample were replaced by the nearest female grower in the register. Thus the sample had a purposeful bias with respect to gender. Growers were listed in the register chronologically by when the grower joined the scheme. Systematic sampling would therefore take care of the effect of such variables as type of land tenure (public vs. customary land), size of land holding, and location (Mulanje vs. Thyolo districts).

The results have been organized to consider sociological aspects, land use and productivity, welfare and income, organization, technology and contractual arrangements for each smallholder authority.

Smallholder Tea Authority (STA)

Sociological aspects

Fully 70 per cent of the STA tea growers sampled were male. Most (42 per cent) were between 35 and 54 years old. Members from the area accounted for 97 per cent of the sample, the remainder having come from outside the area. Clearly, the scheme caters for local people, due in a large part to land security in the area.

Before joining the scheme, farming or wage

Table 4: Total Sugarcane Production and Sugar Price

	1977 ^a	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Harvested cane (ha.)	600	248	676	656	642	665	665	663	663	665	666
Total cane production (tonnes)	68,000	21,674	62,970	73,234	75,200	67,798	64,062	67,301	60,920	65,322	66,551
Yield (tonnes cane/ha.)	103	89	93	112	117	102	96	102	92	98	100
Est. recoverable sucrose (%)	10.87	11.45	12.41	12.52	12.92	12.74	13.32	12.92	12.87	13.26	12.70
Total sugar production (tonnes)	7,394	2,482	7,814	9,169	9,591	8,635	8,531	8,695	7,840	8,636	8,452
Yield (tonnes sugar/ha.)	11.20	10.21	11.56	13.98	14.94	12.98	12.83	13.11	11.82	12.98	12.69
CDC price projections at 60% ex-mill share (kwacha/tonne sugar)	—	130.09	154.57	171.86	184.75	198.61	198.61	198.61	—	—	—
Actual sugar price at 60% ex-mill share (kwacha/tonne sugar)	—	126.83	162.74	182.47	129.45	142.95	166.08	210.85	242.80	250 ^a	250 ^a
Ex-mill sugar price (govt. subd.)	—	N/A	N/A	N/A	N/A	175.26	184.55	N/A	N/A	—	—

a. Estimated.

Source: Smallholder Sugar Authority, 1987.

Table 5: Smallholder Sugar Authority, Dwangwa Smallholder Sugar Project: Smallholder Yield and Income Variability^a

	1979	1980	1981	1982	1983	1984	1985	1986
Number of Smallholders	29	71	154	236	294	403	302	212
Actual yield (tonnes cane/ha.)								
Average	97.73	110.9	126	122.7	99	95.67	101.55	91
Maximum	145.46	157.26	178.32	171.9	156.1	164.181	151.209	138.175
Minimum	82.46	91.82	81.32	82.8	54.9	43.655	39.005	63.435
RCPS Yield (tons cane/ha.)								
Average	—	—	—	122.7	99	95.67	101.648	94.652
Maximum	—	—	—	146.95	111.85	124.238	138.576	115.912
Minimum	—	—	—	94.96	80.61	80.126	50.841	87.172
Net Income (farm)								
Average	859.41	1,792	2,305.02	591 ^b	453 ^b	489 ^b	438	907
Maximum	1,993.94	3,229.21	4,078.76	1,143.75	1,219.65	345.44	1,172.56	2,892
Minimum (loss)	518.23	795.15	602.51	(94.53)	(183.10)	(562.37)	(1,052.03)	(851)

a. Excluding Training/Commercial Cane and Trials.
b. Income using RCPS and after subsidy from Government

Source: Kisebe, 1987.

employment had been the source of livelihood for 76 per cent of the farmers in the sample (31 per cent and 45 per cent, respectively). Some 15 per cent had tried other business ventures. The remainder had hitherto been unemployed and were being financially supported by parents or other relatives. For the non-immigrant growers, 78 per cent of the sample had received their initial plot from the village headman or chief. Thus most farmers were growing tea on their customary land.

Land use and productivity

Just over half (50.1%) of the plots were between 0.4 and 1.3 hectares (1.0 to 2.9 acres). Only 5.6 per cent had plots larger than 2.8 hectares (7 acres). For most growers (57 per cent) the initial plot had been between 0.4 and 1.3 hectares. Only 9 per cent had more than 2.2 hectares (5 acres). Where existing plots were enlarged it was done under the existing customary rules, i.e., taking over a relative's plot. This kind of annexation accounted for about 90.7 per cent of the land expansion that had taken place. Only 8.7 per cent of the growers had extra plots from the Tea Authority. The majority of growers (77.4 per cent) felt the available plot was inadequate for their needs.

Welfare and income

When asked about how they had benefited from the scheme, 41 per cent of the sampled growers first mentioned access to input credit facilities, particularly for fertilizers. Money, food and clothing accruing to them were mentioned first by only 19 per cent of the growers. However, there were mixed feelings regarding which one of the benefits was the most important. Acquiring knowledge through new farming techniques and access to input credit facilities, particularly for fertilizer, were reported by 19 per cent and 18 per cent of the growers, respectively, as the most important benefits from the scheme. Money earned and the availability of enough food and clothing were reported as the most important benefit from the scheme by only 12 per cent of the respondents. Using fertilizers is essential for increasing yields on most Malawi soils. Given the relatively low income levels among smallholder farmers and relatively high fertilizer prices, the provision of a credit facility for these types of inputs in the agrarian economy of Malawi is an important inducement to increasing productivity.

The majority (87 per cent) of the sampled growers in the STA reported having had problems with the scheme's operation. In order of severity,

too little cash payment from principal crop sales, insufficient food, and deductions considered by growers to be too high were the major problems as reported by 39 per cent, 11 per cent and 3 per cent of the respondents, respectively.

With regard to the possibility of selling tea to a buyer other than the Authority, only two respondents indicated that it was possible. None indicated that they had actually done so. One reason for this may be unfair terms of other buyers. However, this is unlikely to be a major reason since only six respondents indicated that they were aware of other buyers' terms (all six felt that they were unfair).

In terms of cash income, the highest proportion of growers receiving income other than from selling tea or other crops was 24 per cent in 1986. In 1985 it was only 16 per cent, and in 1987 it was 21 per cent. For the majority (60 per cent in each year) of those deriving cash incomes from non-crop sales the incomes fell in the lowest categories (0.00 to 99.99 kwacha). This reflects the lack of opportunities to generate non-farm cash income typical in Malawi's rural areas. Those generating income from crops other than tea were always less than 40 per cent in the three years (1985, 1986 and 1987), of whom nearly 90 per cent derived incomes of less than K 100 per year.

This suggests that farmers rely heavily on tea as the major single source of cash. This is corroborated by the distribution of income from tea. The proportion of growers with incomes from tea sales of less than K 99 never exceeds 23 per cent. This implies that the majority earned gross incomes of over K 99. For all the three years, nearly 90 per cent of sample households incurred costs of less than K 200 on the tea and nearly 95 per cent of the households did not incur "other miscellaneous" costs exceeding K 100. This implies that costs associated with tea were the major ones, usually including fertilizer costs.

Table 6 shows the effects of the deductible costs on growers' net income and its distribution. The majority of net incomes for tea (over 50 per cent of households) were below K 300. Most of the remaining growers' net incomes cover a wide range, up to K 2,000. Temporal variations in the net income distribution suggests that in 1986 more farmers were better off than in 1985 and 1987 since the proportion of those in the low income categories (less than K 300) was lower in 1986 (54 per cent compared to 57 per cent in 1985 and 67 per cent in 1987). Although a large proportion of growers earn a low net income, the level of additional income (apart from tea) is low.

Table 6: Net Income for Tea^a (Kwacha)

Income category (k)	1985		1986		1987	
	Freq.	Per cent	Freq.	Per cent	Freq.	Per cent
0.00 - 99.99	323	35.49	259	28.46	355	39.01
100.00 - 199.99	130	14.29	140	15.38	150	16.48
200.00 - 299.99	74	8.13	107	11.76	110	12.09
300.00 - 399.99	64	7.03	59	6.48	65	7.14
400.00 - 499.99	58	6.37	50	5.49	54	5.93
500.00 - 599.99	50	5.49	47	5.16	40	4.40
600.00 - 699.99	33	3.63	32	3.52	29	3.19
700.00 - 799.99	28	3.08	35	3.85	20	2.20
800.00 - 899.99	21	2.31	23	2.53	18	1.98
900.00 - 999.99	16	1.76	20	2.20	11	1.21
1,000.00 - 1,999.99	80	8.79	95	10.44	47	5.16
2,000.00 - 2,999.99	21	2.31	24	2.64	5	0.55
3,000.00 - 3,999.99	5	0.55	9	0.99	2	0.22
4,000.00 - 4,999.99	3	0.33	5	0.55	1	0.11
5,000.00 - 9,999.99	4	0.44	5	0.55	3	0.33
10,000.00 and over						
Total	910	100.00	910	100.00	910	100.00

a. All tea was sold to the Authority except in 1985 when one grower sold his tea elsewhere for a total value of K 314.90.

Source: Field Survey, Smallholder Tea Authority, 1987.

The maximum net income (K 5,000) indicates that there is scope for earning good incomes under the scheme. Extremely high net incomes are probably related to resource availability, especially of land and labour. For the majority of households in the Thyolo-Mulanje area, land would be in short supply due to high population densities and the concentration of large-scale tea estates.³ Thus higher incomes from tea would depend heavily on good land and crop husbandry such as using capital-intensive inputs, such as fertilizers, as well as a high labour intensity for picking.

When asked what livelihood growers would pursue if they left the scheme, over half (55 per cent) responded that they would continue farming. Over one fifth (21 per cent) of the respondents said they would revert to wage employment, while only 13 per cent would engage in other income-generating business ventures (Table 7). These results agree with Machika and Nankumba's observations on the dynamics of customary land tenure systems and smallholder farmers' aspirations.⁴ They observed that, given various choices within the context of customary land, most (62.8 per cent) smallholders would rather run their own farms than work for someone else. Over one third (34 per cent) of the respondents opted for non-farm ventures, suggest-

ing that those opting for farming would find themselves locked into subsistence farming if they left the scheme since they would have inadequate land outside the scheme.

When asked whether the scheme's establishment had led to people being displaced and consequent hardship, 19 per cent of the respondents knew some people who were displaced by the scheme. Of these, about 11 per cent indicated that displaced people were compensated and had settled elsewhere. These small percentages suggest that a considerable proportion of farmers were not displaced but instead became more involved in the scheme using their own land.

Organization

The majority (97 per cent) of the respondents belonged to some farmers' organization. A small proportion (3 per cent) did not belong to any growers organization, over half (55 per cent) of whom had attempted to form some growers' organization but did not succeed, mainly because of lack of co-operation among growers. In spite of this lack of co-operation, the growers acknowledged the usefulness of a growers organization, particularly with respect to reporting growers' problems and assisting them in farming methods (Table 8).

Table 7: Livelihood Desired if Left the Scheme, STA

Livelihood	Frequency	Per Cent
Farming	499	55
Business	117	13
Earning a salary	189	21
Farming and salary	3	—
Business and farming	13	1
Salary, farming and business	3	—
Doesn't know	69	8
Supported by parents/relatives	8	1
Join another scheme	4	—
Not applicable	5	—
Total	910	99^a

a. Does not total 100 per cent due to rounding

Source: Field Survey, Smallholder Tea Authority, 1987.

Table 8: Growers' Organisations' activities

Activities	Activities of new organisation		Current activities		Past activities		Potential activities	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Representation	—	—	76	8	5	0	67	7
2. Buying inputs	—	—	9	0	2	0	23	3
3. Help in farming methods	4	0	392	43	3	0	36	4
4. Lend some help	1	0	81	9	1	0	27	3
5. Report farmers' probs.	5	0	111	2	—	—	52	6
6. Reported with no results	—	—	5	—	10	1	3	0
7. Settling disputes	—	—	100	11	2	0	3	0
8. None	2	0	1	0	—	—	522	57
9. 7 & 3	—	—	81	9	—	—	3	0
10. Welfare activities	2	0	12	1	3	0	28	3
11. Help obtain loans	3	0	5	0	—	—	19	2
12. Fertilizer, not free	1	0	1	0	—	—	2	0
13. Fight for price increases	1	0	1	0	—	—	2	0
0. Not applicable	892	98	36	4	882	97	43	5
Total	910	98^a	910	98^a	910	98^a	910	98^a

a. Does not total 100% due to rounding.

Source: Field Survey, Smallholder Tea Authority, 1987.

The data in Table 8 also show that almost half (43.1 per cent) of the respondents who belonged to a growers' organization felt that their organization provides assistance in farming operations. About 11 per cent of the respondents acknowledged that the organization played the role of a court in settling growers' disputes. Although only 1 per cent of the

respondents reported that their organizations' representation of the growers was fruitless, half (57 per cent) of the respondents suggested that there were no other tasks to be done by the organization.

The success of growers' organizations in the STA scheme may be attributed to the leadership's ability to handle disputes and encourage the grow-

ers to help each other. Field data show that the majority (89 per cent) of the respondents felt that the organizations listen with ease to farmers' concerns.

Technology

Fully 98 per cent of the growers started growing tea only after joining the scheme, suggesting that there may be important barriers to entry for non-scheme growers. These barriers are likely to be mostly technological. For example, 95 per cent of the 444 households who indicated that they had experienced increases in yields said that the major determinants were factors such as fertilizer application and farming methods. On the other hand, those who did not experience yield increases blamed non-technological factors, such as unfavourable rainfall and aging bushes. For the 22 per cent who experienced increased profits, technological factors, such as "new farming method", "yield increases" and "good crop variety", may explain the change.

The quality of tea had improved for 80 per cent of growers while they had joined the scheme, primarily due to good crop husbandry. Sixty-four per cent of the growers still used farming practices that were recommended when they first joined the scheme, while 27 per cent indicated that the practices were changed often. The extension workers who reached growers were mostly based at the scheme rather than from the Government (for 87 per cent and 13 per cent of the respondents, respectively). Most (97 per cent) of the sampled growers actively sought extension advice, which the majority of growers (97 per cent) believed was free of charge. Moreover, 96 per cent of the growers totally relied on the techniques they were taught under the scheme because they did not know of better alternatives.

Regarding farm level decision-making, 79 per cent of the growers felt that the scheme made decisions their behalf, most likely through the extension advice.

Seventy per cent of the sampled growers used hired labour, implying that smallholder tea growing under the scheme generates additional employment. This should not be surprising given the labour intensity of tea picking. However, the majority (89 per cent) hired fewer than six workers. The tasks done by hired workers mentioned most frequently were weeding and harvesting (55 per cent), weeding (14 per cent), harvesting (11 per cent) and pruning, weeding and harvesting (10 per cent). Thus weeding, pruning and harvesting are

the main tasks of hired labour.

There is no uniformity in the way the wage rates for workers are calculated. The most popular method seems to be on a monthly basis (44 per cent), followed by a per field basis (30 per cent) and a daily basis (23 per cent). For those who hired labour, 93 per cent indicated that they actually paid less than K 20 per month, which is quite low considering that the statutory monthly minimum wage is K 26.70. Some of the workers engaged may themselves be subsistence farmers working for the tea growers on a part-time basis.

Contractual arrangements

A significant proportion (87 per cent) of growers signed their contracts on joining the scheme. Only two-thirds (67 per cent) of the respondents acknowledged the authority's commitment to the contract; about one fifth (21 per cent) expressed discontent over the authority's commitment. According to the respondents, the contracts are violated in several ways. The most important violations include: deductions that are too high; not allowing growers to decide whether loans be in cash or in kind; and rejecting tea due to delays in the authority providing transport for picked leaf.

There have also been cases of growers not abiding by the contract, as reported by 19 per cent of respondents. The majority (81 per cent) of growers did not know what happened to those who did not abide by the contract; 15 per cent indicated that warnings were issued to such growers, while cases of eviction were reported by only 2 per cent of the respondents (Table 9.). These results suggest that harsh treatment of growers by the STA was not a common practice. In the Thyolo-Mulanje area land is so scarce that growers on public (STA) land have to abide by the contract and the authority must be rather sympathetic to the growers.

The low proportion of growers evicted may be explained partly by the sympathetic and educational approach adopted by the authority towards non-complying growers. Also, about three-quarters (74 per cent) of the growers cultivate their own land. Disagreements between the STA and the growers' organizations were so rare that 79 per cent of the respondents knew little about any disagreements. This may be due to the educational approach adopted by the authority. There were, however, disagreements between the authority and the growers over payments and the weighing of the harvested leaf during sales. The highest proportion of respondents reporting these cases were 4 per cent and 3 per cent, respectively (Table 10).

Table 9: Results of Contract Violations, STA

Action taken against non-complying grower	Frequency	Per cent
Warned	135	15
Withdrawn	17	2
Some warned/some withdrawn	6	—
Encouraged	15	2
Don't know	737	81
Total	910	100

Source: Field Survey, Smallholder Tea Authority (1987).

Table 10: Disagreements Between the STA and Growers or Growers' Organizations

How often/ occasion	STA vs. growers		STA vs. growers' organizations	
	(frequency)	(per cent)	(frequency)	(per cent)
Often	60	7	10	1
Rarely	344	38	172	19
Never	437	48	9	1
During Payments	39	4	2	—
During weighing	25	3	1	—
Don't know	5	—	716	79
Total	910	100	910	100

Source: Field Survey, Smallholders Tea Authority, 1978.

According to the survey, 96 per cent of the respondents felt that the STA rarely undertook tasks which could be done by growers. Only 3 per cent of the respondents indicated that pest control, road maintenance, the procurement of inputs, conservation or planting are done by the authority. The majority (95 per cent) of respondents objected to asking the growers' organizations to undertake these tasks, thereby leaving them to be done by the authority (as requested for planting) or the growers themselves.

From the growers' point of view, 85 per cent felt that the authority had not lived up to their expectations. Low profit and little money due to high deductions were disappointments cited by the majority (72 per cent) of respondents. In a few cases expectations were exceeded—such as when bonuses or fertilizer loans were received—according to 14 per cent of the respondents.

Smallholder Sugar Authority (SSA)

Sociological aspects

Sugar growers under the SSA scheme were

virtually all men, with the exception of one widowed woman. The largest category of farmers were between 35 and 44 years of age (44 per cent). A majority of the growers (70 per cent) had attained at least the senior primary level of education (Standard 5) and could thus be assumed to be literate.

The average number of children per family among sugar growers was five, the number of children ranging between one and seventeen. Over 70 per cent of families had six or fewer children. Family size constrains families' standard of living to the extent that the children stay with the families or are dependent on them. The severity of this constraint depends on the availability of resources, such as land for food-crop cultivation, and whether the children contribute to the family's labour needs.

In contrast to the smallholder tea growers, only 16 per cent of the sugarcane growers lived in the area before joining the scheme. Thus over 80 per cent were immigrants to the area. The regional distribution of origin indicates that Nkhota-Kota and nearby Nkhata Bay districts accounted for only 21 per cent of the growers. The rest came from further away: Central Region (47 per cent), the Southern

Table 11: Livelihood before Joining the SSA Scheme

Livelihood	Frequency	Per cent
Farming	90	48
Business (non-farm)	7	4
Wage employment	73	39
Farming/Wage employment	2	1
Business/Farming	1	1
Farming/Employment/Business	1	1
Supported by parents	7	4
Was in another scheme	4	2
Other	2	1
Total	187	101^a

a. Does not total 100 per cent due to rounding.

Source: Field Survey, Smallholder Sugar Authority, 1987.

Region (33 per cent) and the remainder from the Northern Region. The relative importance of the Southern Region in supplying growers for the scheme is likely due to the heavy population pressure there, while in the Northern Region the population pressure is relatively light.

By the time of the survey, the vast majority of the farmers (99 per cent) had had at least four years of experience in the scheme. Most (48 per cent) had been farmers in their previous occupations or had been in wage employment (39 per cent), probably in agriculture (Table 11).

Land use and productivity

Land is the smallholders' primary resource. Fully 85 per cent of the growers indicated that they did not have enough land under the scheme for their farming requirements—to increase both food and cash crop cultivation. The vast majority of these growers (94 per cent) indicated that they planned to acquire more land. Considering the predominance of immigrants among growers, it is not surprising that 89 per cent of the growers experiencing land constraints saw the SSA as their only possible source for increasing their land holdings. For growers from within or near the scheme, their respective traditional authorities—chiefs or village headmen—would be a natural source for a solution to the land problem.

A high proportion of growers (79 per cent) indicated that their food harvest was not adequate. The most important reason, stated by 60 per cent of all growers, was land shortage, to which family size contributed significantly. Ninety per cent of the growers supplemented their food harvests in the

event of food shortfalls with purchases, suggesting that cash incomes have an important role.

Welfare and income

There were many benefits derived from the scheme, but the respondents indicated that the most important was receiving knowledge about improved farming techniques (35 per cent). The availability of general credit facilities and credit for fertilizer was the second-most important category of benefits, followed by medical care and the cash earnings, food and clothes associated with the scheme. Transport and infrastructure had much less impact on the growers.

Over 90 per cent of the growers indicated that they had experienced problems related to the scheme. Over 70 per cent of the respondents mentioned problems to do with their income: no profit, deductions, poor pay, the relative crop payment system (RCPS), late payments and general shortage of money.

Sugarcane growers on the scheme generally have gross annual earnings in excess of K 4,000. Moreover, these gross earnings showed a marked increase over the 1985-87 period. For example, 98 per cent of the growers derived gross earnings of K 4,000 and above in 1985, while in 1986, 97 per cent derived gross earnings of K 4,500 or above, rising further to K 5,000 and above in 1987. However, various deductions are made from these earnings at the source so that the actual earnings received by the growers in return for their labour and effort can be far below the gross earnings.

Table 12 shows the pattern of net incomes after all deductions (for respondents for whom data were

available). Net incomes are much lower than gross earnings, reflecting that expenses deducted for various services and inputs provided by the SSA account for much of the gross earnings. For 1984 and 1985 most net incomes fell between K 100 and K 499. During these years, few growers had net incomes from sugarcane above K 700, sharply contrasting with the gross earnings of above K 4,000. Net incomes earned in 1985 appear to have been worse than those experienced the year before (Fig. 1). However, net earnings for 1986 were a marked improvement over both of the earlier years. In view of the improvement in gross earnings noted earlier between 1984 and 1985, the net income comparison between those years suggests heavy deductions in 1985 compared to 1984.

The net incomes indicated in Table 12 cannot be considered to be high for most of the growers. However, these incomes from sugarcane could be supplemented by other income generating activities. Levels of income generated from sale of other agricultural produce suggest that this source of income is not a promising one for the majority of the growers. In each of the three years (1984, 1985 and 1986) over 60 per cent of the growers derived no incomes from selling other agricultural produce. For those few for whom this source was a possibility, the incomes so earned were generally less than K 100.

A quantitative and qualitative profile of the deductions from growers' incomes are shown in Table 13. The data suggest that the heaviest costs incurred by growers are associated with extension service and development machinery costs for harvesting and fertilizer issue. These are responsible for significantly reducing net incomes below the gross levels.

Organization

At the time of the survey, there was no farmers' organization in the SSA although farmers elected a representative to present their problems and suggestions to the SSA Board. However, the organizations observed by the study allowed for election of Village Chiefs who were to deal with social problems within their settlements.

Technology

At the time of the survey, most of the growers (99 per cent) had had at least four years of experience in the scheme. As discussed earlier, the largest proportion had been farmers in their previous occupations or had been in wage employment (Table 11). Thirty-nine per cent had grown the principal crop prior to joining the scheme using traditional methods. This category of growers felt that the new methods they learned at the SSA were better than the traditional method.

Table 12: Net Income from Sugar Growing (Kwacha)

Income category	1985		1986		1987	
	Freq.	Per cent	Freq.	Per cent	Freq.	Per cent
0.00-99.99	17	9	18	10	1	1
100.00-199.99	30	16	36	20	3	2
200.00-299.99	35	19	39	21	3	2
300.00-399.99	29	16	38	21	15	8
400.00-499.99	36	19	30	16	8	4
500.00-599.99	16	9	14	8	30	16
600.00-699.99	8	4	5	3	27	15
700.00-799.99	8	4	1	1	22	12
800.00-899.99	5	3	2	1	15	8
900.00-999.99	—	—	—	—	16	9
1,000.00-1,499.99	2	1	—	—	31	17
1,500.00-1,999.99	—	—	—	—	10	5
2,000.00 and over	—	—	—	—	4	2
	186	100	183	101 ^a	185	101 ^a

a. Does not total 100 per cent due to rounding.

Source: Field Survey, Smallholder Sugar Authority, 1987.

Table 13: Quantitative and Qualitative Profile of Deductions from Growers' Gross Incomes, SSA

Deductions	Amount for over 95 per cent of farmers (kwacha)		
	1985	1986	1987
Expenditures			
Development	587	587	579
Extension	1,577	1,792	1,861-3,722
Conservation	106	101	93-187
Replanting	299	160	176-188
Road maintenance	28-32	28	19-39
Machinery charges			
Tractor hire	minor	(Generally less than K 50)	
Harvesting	heavy	(Generally from K 800 to over K 1,000)	
Fert. delivery (transport)	minor	(Generally less than K 100)	
Stores issues			
Fertilizer	heavy	(over K 300 in 1985, over K 700 in 1987)	
Maize	minor	(less than K 100)	
Other costs			
Principal crop insurance	minor	(about K 50)	
Living allowance			
Medical charges			
Interest on credit balance)	minor	(about K 200, but increasing by 1987 (over K 500))	
Misc.)			

Source: Field Survey, Smallholder Sugar Authority, 1987.

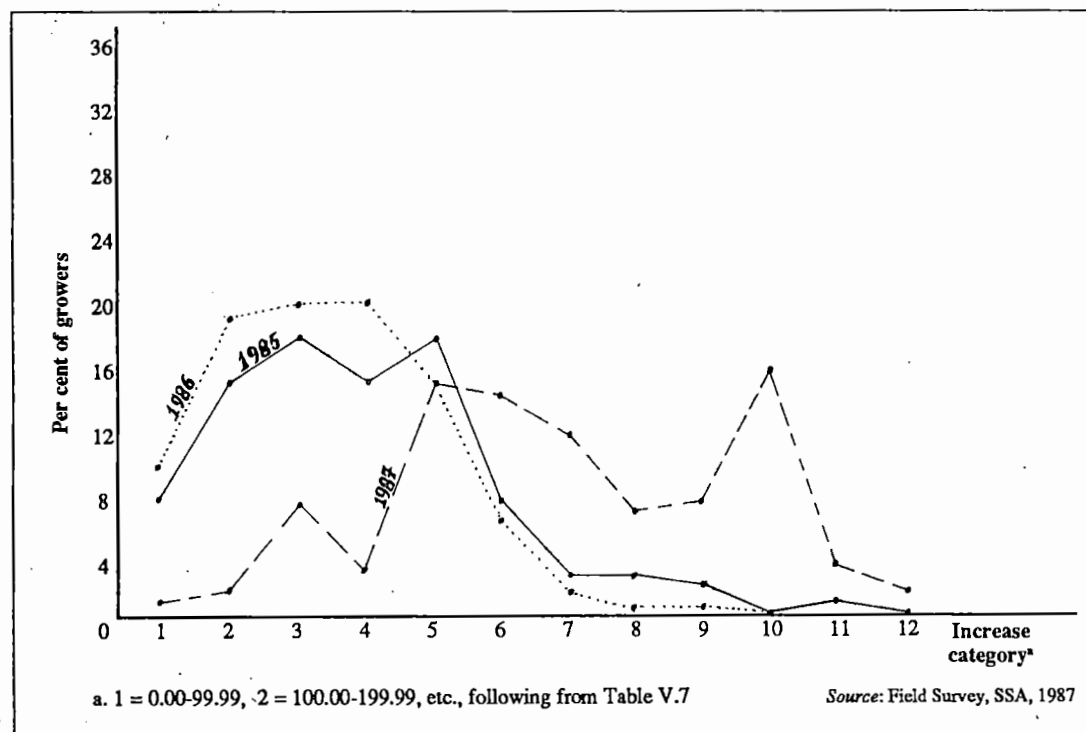
Figure 1: Growers' Income Distribution

Table 14: *Estimated Technical Coefficients Influencing Income from Principle Crop (Y_p) at STA, 1985-87 (Regression Statistics for Experience (E_p), Land (L_p), Gender (G) and Age (A) of Grower)*

Explanatory Variable		Parameter Estimates ^a for Function $Y_p = C_o + b_1E_p + b_2L_p + b_3G + b_4A$ by year		
		1985	1986	1987
E_p : Experience growing principle crop (years)	(b_1)	251.387 ^b (7.862)	320.681 ^b (7.502)	186.555 ^b (6.623)
L_p : Land devoted to principal crop (hectares)	(b_2)	7.692 (1.491)	—	6.595 (1.451)
G: Gender of grower (dummy)	(b_3)	-272.166 ^c (4.878)	-281.191 ^b (3.770)	-220.044 ^c (4.477)
A: Age of grower (years)	(b_4)	58.909 ^b (3.476)	81.151 ^b (3.582)	51.828 ^b (3.472)
Other Regression Data:				
Intercept	(C_o)	-216.870	-307.127	-146.337
R ²		.158	.136	.129
F-statistic		36.256 ^b	40.394 ^b	28.838 ^b

a. Figures in brackets are t-statistics
b. P = 0.001

Source: Field Survey, Smallholder Tea Authority, 1987.

Contractual arrangements

An overwhelming majority (98 per cent) of the farmers receive a comprehensive package of services related to sugar-growing, including extension services and planting, haulage and harvesting the cane crop. The cost of these services is deducted from the growers' gross earnings from the scheme and, ultimately, it can affect their perception of the financial benefits of remaining in the scheme. Generally, chemical inputs provided under the scheme were not readily available from other sources and growers had little choice of source.

Despite the general importance of rice cultivation in Nkhota-Kota District, the sugar growers consider maize to be by far the most important food crop. Land availability and allocation to food crop production generally reflects the national pattern. Sixty-six per cent of the growers had 0.4 hectares or less under food crops, with a further 25 per cent having up to 0.8 hectares. This indicates that the SSA abided by this aspect of its contracts. However, there were cases where growers were withdrawn after several warnings from SSA because they did not abide by the terms of the contract. Of the twelve interviewed, about half had received

three warnings. The total number of people who withdrew was twenty-four while those who resigned were seventy-three, indicating some discontent over the contracts with the SSA.

Factors influencing income levels from principal crop

Multiple regression analysis was performed to determine explanatory variables of income from the principal crop. The following regression model was used:

$$Y_p = C_o + b_1E_p + b_2L_p + b_3G + b_4A$$

where, Y_p = Income from principal crop (kwacha)

E_p = Experience in growing the principal crops (years)

L_p = Land devoted to principal crop (hectares)

G = Gender of grower (dummy variable)

A = Age of grower (years)

C_o = Constant

$b_1 - b_4$ = Coefficients to be estimated

Table 15: *Estimated Technical Coefficients Influencing Income from Principle Crop (Y_p) at SSA, 1987 (Regression Statistics for Experience (E_p) and Age (A) of Grower)*

	C_0	Experience (E_p)	Age (A)
Coefficient	-112.883	187.227 ^a	52.353 ^a
(t-statistic)		(6.643)	(3.505)
$R^2 = .127$			
F-statistic = 37.693 ^a			
a. $P = 0.001$			
Source: Field Survey, Smallholder Sugar Authority, 1987.			

Regarding tea production, for all three years the multiple regression analysis indicates that income from the principal crop (tea) was positively and significantly ($P = 0.001$) associated with the grower's age and his or her years of experience in growing the principal crop (Table 14). These results establish that the number of years in tea growing, as a proxy for experience, is an important variable in tea production. This phenomenon was also observed among tenants growing Burley tobacco in Malawi.⁵

There was a significantly negative ($P = 0.001$) association between income from tea and the gender of the growers, indicating that female growers were producing better quality tea, which fetched a higher price and culminated in a relatively high income. Field experience has shown that women (including young girls) are generally employed to harvest tea in the tea estates because they tend to be meticulously careful and harvest better quality than their male counterparts. Tobacco graders at the Lilongwe Auction Floors have expressed similar views regarding women's excellent workmanship in grading, despite reservations that women tend to pick less in a given time period.

The land area devoted to the principal crop (tea) did not explain any variation in the levels of income from tea. This is not surprising because in the Thyolo-Mulanje area there is such a shortage of land that the areas allocated to tea are very tiny and virtually identical. This is also true for growers on customary land since for those on public land the STA allocates the same number of hectares to each grower on the scheme. It has been indicated earlier that decisions regarding land allocation to the principal crop were made by the STA; this applying to growers on STA land.

Multiple regression analysis for the Smallholder

Sugar Authority data was restricted to one season (1987), and to only two variables: experience and age of sugarcane growers. Land area was quite homogeneous and all growers were male except for one widowed woman. Similar to the case of tea, the analysis indicates a significant ($P = 0.001$) and positive association of income of the principal crop (sugarcane) with age and with the years of experience in growing sugarcane (Table 15).

Policy Implications

Contract farming in Malawi is generally limited to two export and processed commodities: sugar and tea. The production and processing technologies are complex and new to most growers and some operations involve economies of scale. Producing these crops also requires large quantities of specialized inputs with a high capital outlay. The specialized nature and capital initially required to operate tea and sugar processing facilities restricts their application to processing indigenous food crops and other cash crops. Unless multinational corporations are encouraged to engage in producing and processing basic food grains and other vegetable crops, contract farming does not form the basis of a general rural development structure.

Where public land is involved, contract farming seems to be biased against female farmers, as observed in the SSA. To avoid this problem, contract farming should involve farmers operating their own land under customary law. Smallholder authorities should have their own processing plants if this implies direct access to outside markets for the processed commodities concerned. There were relatively fewer problems in STA than in SSA in terms of delays in harvesting the principal crop and in paying proceeds to the growers. This was proba-

bly because the STA had acquired its own factory.

Potential growers should have experience prior to their being recruited since experience in growing the crop has been shown to be a significant factor in increasing yields and quality of tea and sugarcane. According to the functions proposed for the authorities, they should establish training farms or provide funding to some training institution to assist in training potential growers in the field.

Farmers should have legal representation when signing contracts to assist them in their interpretation. To minimize variation in commodity prices, the contract should suggest that the Government prescribe prices of commodities. Alternatively, a national board could be set up to represent smallholder farmers making contracts in order to bargain for better prices with contracting organizations.

Credit facilities should be provided to smallholder farmers either by way of loans, overdrafts, or Government loans. Credit should not be restricted to production inputs *per se*. Consumption credit is necessary to the growers operating on contract because large areas are reserved for cash crops as opposed to food crops. This has been advocated by Vitols who argued that allocative efficiency may be of only minor importance compared with X-efficiency since the reasons for considerable variation in output must not be restricted to observable measurable inputs.⁶ The elements of a contract may not be fully specified; it may be impossible to specify every detail of labour's obligations and not all factors that contribute to output are marketed. Motivation of the workforce can considerably affect both quality and quantity of output (X-efficiency) but it cannot be purchased as with other inputs. The question of food is as important as the question of proper housing for the growers operating on public land.

Concluding Remarks

Generally, prices projected at 60 per cent ex-mill have been lower than those realized (see Table 4). This indicates that the aspirations of the SSA and the DSC as organizations have been achieved. However, smallholder farmers' incomes have been much lower in the sugar authority than in the tea authority mainly because of high deductions and use of the RCPS formular to calculate the cane purchasing price. The RCPS system needs to be reviewed, if not abandoned, because it contributes to low productivity and unnecessary unrest both among the tenants and between the tenants and the authority.

Contracts which set a fixed price do not necessarily reduce risk for the growers or the buyer and can even increase risk for both, depending on specific market characteristics. Thus risk should not be thought of as a zero-sum game. Contract farming should not be viewed as a method by which agribusiness "controls" agriculture while transferring all risks to the growers. Successful schemes generally involve the development of mutual trust between a buyer and growers. Contract violations by the company are likely to be the sign of poor management or a failing concern.

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Notes

1. CDC first managed the scheme. However, because of the large number of expatriate staff and other associated expenses, CDC personnel were phased out and replaced by local staff. Management has been a large component of total costs. For example, according to SSA accounts, total costs for 1986 and amounted to K 1, 294,859 of which management charges constituted 41 per cent.
2. The currency of Malawi is the Malawi Kwacha (K).
3. In 1982, the population densities for Thyolo and Mulanje districts were 252 and 185 persons per square kilometre, respectively. These are higher than the average for the Southern Region (125) and the nation (85).
4. M. Machika and J.S. Nankumba, *Dynamics of Land Tenure*.
5. Nankumba, Tenure systems in the estate subsector of Malawi.
6. Vitols, Sharecropping and X-Efficiency.

Contract Farming Schemes in Swaziland: Vuvulane Irrigated Farms and Mphetseni Settlement Scheme

Vincent Majozi Sithole and Clasina C.M. Boeren
Social Science Research Unit, University of Swaziland
Kwaluseni, Swaziland

Abstract

This paper investigates the role of contract farming in Swaziland by examining samples from Vuvulane Irrigated (sugarcane) Farms, and Mphetseni Pineapple Settlement Scheme. The performance of the schemes is evaluated against their failure or success in achieving objectives of the Swaziland Government, the scheme members and the processors. Possibilities of replicating the scheme in the country are assessed.

Introduction

Contract farming defined

In their definition of contract farming and out-grower schemes Neocosmos and Testerink point out that the schemes constitute a relationship between (sections of) the local peasantry and transnational agribusiness enterprises, often in combination with the local Government. This relationship involves the transnational controlling the more profitable sector and marketing the final product (through its privileged and exclusive access to the world market) while restricting smallholders to a production process which it indirectly controls. The transnational is able to exercise control over production through its exclusive control over the market. It also provides managerial and technical services and means of production to the contracted peasantry on an easier basis than that available on a free market.¹

For the relationship to qualify as contract farming the transnational must have near to total monopoly of the market. If other markets exist and the transnational offers services to producers so that they will choose to sell to the transnational rather than to other buyers, then this is not contract farming as defined above. Rather, it is common competitive practice.

However, this definition appears to be too narrow. This paper adopts a definition used by Minot: Contract farming is defined as agricultural production within the context of a commercial agreement between the grower and the buyer which affects important production decisions. The contractor—frequently a processor or an exporter—often pro-

vides seeds, fertilizer and other inputs on credit along with technical assistance, on the condition that the producer agrees to sell the output to him.²

In Swaziland there are several outgrower schemes and contractual relationships between growers and buyers, both on title deed land and on Swazi Nation land.³ This paper discusses Vuvulane Irrigated Farms (VIF) scheme and the Mphetseni Pineapple Settlement Scheme where the principal crops are sugarcane and pineapples, respectively.

Sample

Primary and secondary data sources were used to assess both the VIF and Mphetseni schemes. Secondary data sources were from the Social Science Research Unit (SSRU) of the University of Swaziland (UNISWA), UNISWA Library, annual reports from the sugar and pineapple industries and Government publications. Very little literature is available on the two schemes, particularly the Mphetseni pineapple scheme.

To supplement and update the information interviews and discussions were held with the personnel at VIF, Swazican, Tibiyo Taka Ngwane (Tibiyo), Mananga Agricultural Training Centre (Mananga), Ministry of Agriculture and Cooperatives (MOAC), Mphetseni Scheme's Cooperative Management, and SSRU staff members.

Personal interviews were used to collect primary data at both schemes, primarily using a questionnaire with both pre-coded and open-ended questions. Tape recorders were used mainly for open-ended questions.

At VIF a list of the 263 scheme members was obtained, of which 60 farmers were selected at

random. Interviews were held in the farmers' homesteads. At Mphetseni, 9 out of a total of 19 farmers were interviewed. The intention was to interview all 19 farmers, however the Co-operative Management Committee objected to the other 10 farmers being interviewed.

Land tenure

The Concessions (Partition) Act 28 of 1907 resulted in expatriate settlers obtaining two-thirds of the land in Swaziland. The remaining one third was reserved for Swazis. Swazis who were on the alienated land were given five years to move, unless they made arrangements with the new land-owners.⁴

Land given to the settlers was—and still is—title deed land (TDL), governed by Roman Dutch law. It may be held in freehold or in leasehold. Title holders may use the land any way they deem fit, provided they do not exceed the limitations imposed by public and private law.⁵

Land that was given to the Swazis under the terms of the Act is, in principle, held under traditional tenure, herein referred to as Swazi Nation land (SNL). SNL is held in trust by the King for the Nation and is divided into chiefdoms for administrative purposes. The chiefs allocate land to households on behalf of the King for cultivation and establishing a home site in exchange for a cow, loyalty and tribute labour. Unallocated land is open to communal grazing.⁶

Currently SNL constitutes about 55 per cent of the total land area of Swaziland, while TDL accounts for the remaining 45 per cent. The increase in SNL from some 33 per cent in 1907 has been due to land repurchase under the Lifa Fund (financed from a cattle levy), through Native Land Settlements (allowing eviction of settlers failing to utilize the land satisfactorily), and through individual or company purchases by Swazis themselves. After independence the Lifa Fund was replaced by a British-funded land repurchasing scheme.

Native land settlements are at present governed by Swazi Law and custom. Land repurchased under the Lifa Fund programme and under the British-funded land repurchase programme is registered in the name of the Ngwenyama (King) in trust for the Nation. Part of this land was made available to chiefs for the Rural Development Areas Programme (RDAP) and is administered in accordance with Swazi law and custom. The remainder is used by Tibiyo or Tisuka⁷ as agricultural projects, industrial projects, or housing projects, or administered by the Ministry of Agriculture and Cooperatives as

agricultural projects.⁸ The legal status of these lands is a cause for confusion. Some people believe that the land becomes SNL, others that the land remains TDL.⁹ This confusion is caused by the definition of "Swazi Area" in the Natural Resources Act (71/1951) and the use of "Swazi Nation" in the Vesting of Land in King Order (45/1973). One may argue that as long as the land has not been made available to chiefs, it remains title deed land governed by Roman Dutch common law. In this case the land should be referred to as title deed land registered in the Ngwenyama, since several statutes that impose restrictions to private tenure land do not apply to land registered in the Ngwenyama in trust for the Nation. In so doing, one reserves the term SNL for land governed by Swazi Law and Custom, be it registered or unregistered.

In terms of the Vesting of Land in King Order, the Government is not allowed to deal with land registered in the Ngwenyama in trust for the Nation or with rights to minerals in that land. This restriction does not apply to Tibiyo or Tisuka.

Another category of land in Swaziland is "crown" or "Government" land. This type of land is controlled by the Government for public purposes. Since 1973, all land and real rights in land owned by the Government are vested in the King and registered as crown land. The Government is allowed to let and sublet crown land on behalf of the King. The Government, however, in principle is not allowed to sell, exchange or mortgage crown land without the written authority of the King. According to Armstrong, Government farms are on Crown Land.¹⁰

Sugarcane production

Land in sugarcane production is carefully prepared to meet all requirements of irrigation. Crawler tractors or ordinary tractors are used to pull heavy disc harrows and sub-sailers for cultivation. This is followed by furrowing to prepare for planting. Pieces of unburnt cane stock are used as seeds and are planted in rows to allow the movements of tractors and other machines for fertilization, weeding and harvesting.

A weeding programme is necessary in order to protect the small plant at its early stage. Three weeding methods are available to sugarcane producers: human labour for hoeing, mechanical cultivators or chemical control with herbicides. Chemicals are applied both manually and mechanically, and sometimes aeroplanes are used for spraying.

Chemicals are used to control pests and diseases whenever necessary. Sugarcane ripens after

twelve to fifteen months. It is burned to prepare it for harvesting, and human labour is employed to cut the cane—using bush knives. The cane is then transported to the sugar mill where it is processed into raw (brown) sugar. The raw sugar is transported to refineries and markets overseas. What happens with the molasses and other sugarcane by-products is still being negotiated by farmers and VIF management.

Pineapple production

Preparing the land for pineapple production involves ploughing or sub-soiling to improve sub-surface drainage. The topsoil is disced to a fine tilth for maximum plant growth, and beds are prepared for the pineapple where it will be arranged in double rows. Pre-plant fertilizers are applied at the time of bed preparation.

Three main types of planting material are available to farmers:

- tops: the green leafy tops of the fruit
- slips: the vegetable growth that develops on the stem of the fruit
- suckers: which emerge from the base of the plant

Weeds may be controlled by cultivation—hoeing is commonly used—or herbicides. Pesticides are applied to control pests and diseases whenever necessary.

Pineapples are induced to flower prematurely with compounds that have flower-initiating properties. This permits harvesting to be either concentrated or spread out. In the case of Swaziland this "forcing" makes it possible to regularly supply fruit to the factory. The flower induction programmes are scheduled so that the plant crop ripens in February and March and the ratoon crop ripens between August and September. Pineapples have a five-year cycle.

Contractual arrangements at VIF

The Commonwealth Development Corporation (CDC) bought TDL land from Swaziland Ranches in the lowveld north-eastern part of Swaziland, where VIF and other CDC projects stand today. The VIF scheme was established in 1962 after a series of successful trials from 1959. The trials were on a limited scale involving Swazi smallholders growing sugarcane, cotton, maize and vegetables under irrigation.

Farmers were recruited from throughout the

country. A successful applicant had to be Swazi, healthy and of good character willing to make VIF his home and be recognized as a "good farmer".¹¹ By 1975 the scheme had settled 263 farmers on individual plots averaging 10 acres.

A lease contract was drawn up between CDC and the individual scheme members. Additional agreements were concluded between CDC and the scheme members with provisions for water to be provided to the farmers in their capacity as lessees, services and assistance provided by CDC, organization and supervision by CDC of all matters relating to production and harvesting of sugarcane and a joint account system.

A requirement that at least 70 per cent of the land has to be put under sugarcane (as stated by management and farmers during interviews) is not expressly stated in the contract of lease. It is to be found in a document that the authors could not obtain.

The average area per farmer under the principal crop in the 1986/87 season was 8.2 acres, representing 74 per cent of the land. The rest of the land was used to produce maize, cotton, jingo beans, vegetables (potatoes, carrots, cabbages, tomatoes, spinach and onions) and sweet potatoes.

The scheme is managed by CDC which provides a variety of services to the farmers. Irrigation water from Inyoni Yami Swaziland Irrigation Scheme (IYSIS) is provided at a fixed charge per acre.¹²

VIF management organizes harvesting of the cane in farmers' fields (burns, cuts and transports to the mill), an obligatory service provided to guarantee timely supplies of sugarcane to the mill. Farmers are charged for this service according to the cane tonnage—regardless of distance to the mill—at E 10.00 per tonne.¹³

There is a joint account system in which each grower has to authorize Barclays Bank of Tshaneni to receive all money due to the growers for cane delivered to the Mhlume Mill and credit his account at the bank for that amount. The joint holders of this account are VIF Ltd. and the individual farmers. The bank is authorized by the farmer to pay all cheques drawn against the account if each such cheque is signed by the grower and by any of the signatories authorized by CDC, provided the account shall not be overdrawn.

Farmers expressed dissatisfaction over terms of their lease agreements as early as 1964. They refused to have their cane cut and were not prepared to pay for some services they had received. As a result CDC consulted with the Swaziland Govern-

ment which was to decide on the future of the scheme. Recruitment of new members was suspended at the end of 1974. In 1982 the land was given to the King in trust for the Swazi Nation, free of charge, changing the land from TDL to SNL. VIF Ltd. was bought by Tibiyo Taka Ngwane for a symbolic amount of E 100 and was transferred into a new company registered under the name Swaziland National Agricultural Development Corporation (SNADC). Tibiyo entered into a management agreement with CDC and in 1986 VIF was transferred to Tibiyo.

A new contract is currently being drawn up as the twenty-year lease signed by the farmers has expired. However, as long as no decision has been taken on the question of the land tenure, or a new lease implemented, the present lease contract applies on a monthly basis.

Contractual arrangements at Mphetseni

The Mphetseni Pineapple Scheme is on 250 hectares of TDL which was bought by the Swaziland Settlement Company (SSC) from Usuthu Pulp Company Ltd. in the Malkerns Valley. After being consulted by the SSC the Government initiated a smallholder scheme on the land. The adjacent pineapple cannery made pineapple production attractive for the scheme. In 1964 the land was divided into twenty-seven plots of about 9 hectares each.

The Government formed the Pineapple Settlement Company (PSC) and charged it with the responsibility of running the scheme. A contract of lease was drawn up between the SSC, PSC and the individual farmers. The marketing of processed pineapples was to be done by the pineapple cannery with a contract of lease for a period of twelve years. In 1981 the Government withdrew from the scheme, thereby effectively liquidating the PSC. The Mphetseni Farmers Cooperative purchased the consolidated farm and currently manages it.

At present the relationship between the cannery and the farmers is regulated by a pineapple canning contract for the sale and delivery of the growers' pineapples to the Swaziland Fruit Canners (Pty) Ltd. Farmers are obliged to sell all the pineapples to the cannery, and the cannery is obliged to buy the pineapples from farmers provided it is of the right quality and sold during the correct season.

The land to be put under pineapple production is agreed upon by the company and the grower. The contract starts on the date of signature and continues until the first ratoon crop has been harvested from the planting last notified to the company. The

contract has provision for the proper care of the crop by the grower during the period of the contract; instructions to be given by the company and to be followed by the growers concerning pesticides and their application; practices affecting delivery; settlement of disputes between the company and the grower; and the termination of the contract.

Swaziland Government policy towards outgrower schemes

Outgrower schemes in Swaziland have a history dating as far back as the early 1960s. Contract farming schemes were mentioned in the country's *First (post-Independence) Development Plan* of 1969. However, the second and third plans are silent on the schemes, and it is only in the Fourth Development Plan that contract farming schemes are mentioned again. The Swaziland Government, through the *Fourth National Development Plan*, states that:

Given the need to improve the elasticity of employment and develop the country's irrigation potential in the most productive way, it is widely recognized that future agricultural development in the modern sector should concentrate on more labour-intensive irrigation schemes on the nucleus/smallholder model. The experience of Vuvulane is considered to provide a successful example in this respect.¹⁴

The Government believes that the existing outgrower schemes have proven to be a success, thus the strategy should be followed to enhance rural development. Mkhabela supports this assertion when she says "VIF farm incomes are higher than farm incomes in communally-held areas in spite of the decline of sugar prices".¹⁵

Key Determinants

Swaziland Government's objectives

The Swaziland Government recognizes the economic importance of rural development in general, and agricultural development in particular. Until recently, the Rural Development Areas Programme (RDAP) has been the Government's main vehicle for promoting rural development in the country.

RDAP was initiated by the Government in 1970. After seventeen years in operation, opinions about its results are mixed but there is convincing evidence to show that the RDAP has been a failure. The programme has led to increases in crop produc-

tivity through introducing improved farming techniques, but there has been a simultaneous decrease in area under crop production.¹⁶ Consequently there has been no increase in crop production. The programme has also failed to ease the overstocking problems.

The main aim of the country's agricultural policy is to assist and encourage Swazi farmers to move from subsistence activity to semi-commercial and commercial farming.¹⁷ Through the RDAP the Government aimed at increasing the incomes and living standards of rural Swazis. Through the outgrower schemes the Government hopes to attain its objective of transforming Swazi Nation land farmers from subsistence to commercial farming. As one official said, the Government "wants to eradicate the attitude that land is used just for subsistence which must be supplemented by paid employment elsewhere. We want to make people aware that they can be self-employed, that farming can be a lucrative business."¹⁸

Even though RDAP has failed, the development aims and objectives of the Government have not changed: failure of the RDAP is seen as a failure of the means to attain the end. Adopting contract farming schemes is therefore an alternative means to attain most of the objectives that were targeted under the RDAP. Through the outgrower schemes the Government wants to:

- extend farm services, marketing, credit and co-operative facilities
- strengthen the crop and livestock extension services, making them more available to farmers
- increase employment opportunities for Swazis

Growers objectives

A VIF applicant must have been recognized by his or her community as a "good farmer".¹⁹ These are the farmers who were producing crops for commercial purposes on SNL prior to joining the scheme. To them, joining the scheme is a venture that will help them expand their commercial farming. Their main objective in joining a contract farming scheme is to increase their family incomes through commercial farming. The packages that come with such schemes are seen by the farmer as the means to attain this objective.

Contracting firms' objectives

The shareholders in contracting firms at VIF are Tibiyo (the owners of VIF), CDC and the Swaziland

Government (shareholders at Mhlume Sugar Mill). At Swazican the shareholders are Swazican, CDC and the Swaziland Government. Even though these are different companies they have many common objectives towards contract farming schemes:

- to be involved in "training and equipping of the nationals to ensure that senior management posts of its projects are staffed by qualified nationals at the earliest possible moment"²⁰
- to spread investment to benefit as large a number of rural families as possible in order to best serve the interest of the recipient country
- to have guaranteed supply (in terms of quality and quantity) of the principal crop, without being involved in the direct production of the product. In the process, the companies are saved the trouble of organizing labour for production
- to attain positive profits in their operations

Evaluation of Performance

Marketing facilities

Farmers are not generally just faced with production issues; they also need to have access to a market for their production. Depending on the product, inaccessibility of markets may be due to an absence of buyers. Recent history of Swaziland shows that even farmers who have surplus maize to sell often find the Swaziland Milling Company faced with financial and storage problems. Farmers have to line up for days and often, in the end, leave without selling. Some of the farmers end up selling at low-priced markets because of lack of transport to take products to higher priced markets.

Farmers at VIF have a guaranteed market for their sugarcane. The Mhlume Sugar Mill purchases all the farmers' cane and the VIF management transports the cane to the mill. Thus VIF farmers are assured of access to the sugarcane market. However, VIF farmers also produce other crops. For these crops the farmers are faced with marketing problems often resulting in highly perishable vegetables rotting in the farms. Farmers sell the crops individually and this is less efficient than if they were sold collectively.

Farmers at the Mphetseni scheme produce only pineapples and the Swazican factory provides a relatively guaranteed market for the pineapple fruit. The co-operative runs a transportation depot from which the farmers' pineapples are transported to the factory without problems.

Thus, for the principal crops in the two schemes there are no marketing problems. There is a need, however, to improve the marketing of the other crops. A well-managed farmers' co-operative can provide this service at relatively low cost.

Extension advice

Farmers on both the VIF and Mphetseni schemes are provided with better extension advice than off-scheme farmers on Swazi Nation land. At VIF and Mphetseni the extension worker to farmer ratio is 1 to 65 and 1 to 19, respectively. These ratios are superior to the 1 to 400 off-scheme ratio on SNL.

At VIF 73.3 per cent of the farmers reported having no problems getting extension advice. One factor may be that VIF extension workers have more readily available transport than those off the scheme. At VIF the extension advice is not restricted to sugarcane, as farmers get extension advice for their other crops as well. Thus farmers benefit not only for the purposes of being in the scheme, they can use this knowledge off the scheme.

Although the Mphetseni scheme has no full-time employed extension workers the farmers have access to such advice. The farm section of the factory is always available to provide advice and the co-operative has a good relationship with the former extension worker who provides advice whenever sought. This was affirmed by 66.7 per cent of the interviewed farmers who reported that they have no problems with getting extension advice. Although the inputs are not directly applicable outside the scheme, farmers in the scheme learn that use of modern inputs will increase crop yields. Consequently they can be expected to readily receive innovations off the scheme.

Both schemes are contributing towards the Government's objective of providing increased extension advice to Swazis. Farmers have benefited since they can increase their crop yields and consequently increase their incomes. The factories/mills benefit in terms of getting high quality products and enough supplies from the farmers.

Credit and farm input facilities

A desire for credit arises whenever the scale of intended operation exceeds the resources immediately available. In the case of Swaziland, and many other developing countries, extension workers demonstrate efficient farming techniques to small-scale farmers. However low rates of adoption of the techniques indicate that farmers have no funds to invest in improved inputs.

Availability of agricultural credit to farmers

induces increases in agricultural output. It promotes increases in incomes and subsequently increases in the standard of living and thus helps the Government control rural-urban migration. Where there are credit problems, farmers are not able to get enough farm inputs, and inputs are not obtainable in time.

Small-scale farmers have various sources of credit in Swaziland. The main source of agricultural credit is the Swaziland Development and Savings Bank. Out of Guma and Simelane's sample of 200 borrowers, 92 used this source of credit. Commercial banks (Barclays, Standard, Bank of Credit and Commerce International) provide an alternative source of credit. Because these are privately-owned and profit-oriented they are very particular about what loans they give, and few farmers utilize such loans (9 out of 200).²¹

Co-operative societies are another source of credit to farmers, although their loans are usually restricted to co-operative members. Seventy-five of the 200 surveyed borrowed from co-operatives.²²

Cotton ginneries in Swaziland also provide credit, including Swaziland Cotton Ginners Company (Matsapa), Swaziland Oil Seeds Mills (Big Bend), and J.L. Clark Ltd (Natal, South Africa). Such credit facilities are restricted to cotton growers. Credit comes in the form of inputs and farmers are obliged to sell their output through these ginneries.

Friends and relatives are another source of credit. In addition, "Shylocks" giving credit have been known to charge interest rates higher than 30 per cent per month. Based on the basic laws of demand and supply the ability to charge such high interest rates—and still maintain demand for credit—indicates a deficit in credit availability. This can be blamed on the type of security demanded from SNL farmers due to the land tenure system.

The Swazi Law and Customs are such that SNL farmers cannot use the land as collateral for loans. Cattle is commonly required as security by formal lending institutions. This puts such credit facilities out of reach of a large group of farmers who do not own cattle, about 45 per cent of SNL farmers.²³ Lending institutions that do not require security, such as co-operatives, have a record of high defaulters, and consequent financial problems.

Credit is available to VIF scheme members for building materials and farm inputs (such as cane seed, fertilizers and pesticides). This credit facility is not restricted to sugarcane inputs. Regardless of the crop, the loan is repaid from sugarcane reve-

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nues, at an interest rate 1 per cent above the commercial banks' prime lending rate (averaging 12 per cent per annum in 1987).

As a result of the ease of getting loans at VIF, scheme members get enough inputs and in time. Over 70 per cent of VIF farmers reported having no problems in obtaining inputs, and 80 per cent reported getting services (such as harvesting and transportation) in time. Of the farmers, 77 per cent know of no cheaper sources of services. Through the credit facilities farmers get equipment (such as tractors) on time, to which over 70 per cent of the farmers attested, while 56.7 per cent of whom knew of no cheaper sources.

At Mphetseni, the management committee keeps records of individual farmers. It provides the farmers with credit facilities, through which farmers get all their required inputs. The company pays the farmers for pineapple sales through one cheque to the scheme, sent to the committee. The committee then pays individual farmers after deductions of their outstanding loans.

About 78 per cent of the farmers at Mphetseni reported having no problems with getting farm inputs. The same percentage reported getting services and equipment in time, while 88 per cent of the farmers knew of no cheaper equipment and services sources.

Thus the two schemes have extended credit facilities to farmers, without the requirement for the latter to have the conventional collateral. A financial system—through which distribution of crop proceeds are controlled by the lender—makes this possible. Farmers are assured of enough and timely inputs, services and equipment. The scheme members in this aspect fare better than those off the scheme.

The repayment rate in the Mphetseni scheme is high compared with off-scheme rates, and the scheme reports no problems in this respect. At VIF the low repayment is due to misunderstandings between management and farmers about the contracts signed. At present the funds are tied up in the bank, thus there is no direct loss to either party.

Employment

Swazican employs the largest number of women in a company in the country, and is therefore seen to be contributing to employment creation. The whole factory employs about 3,500 people during the peak season.²⁴ The scheme contributes to this by providing the basic input (pineapple fruits) to the company. In addition, scheme members on average employ 3 people to weed, plant and harvest, rang-

ing from 2 to 4.

Scheme members at VIF on average employ 7.7 people, ranging from 0 to 32 per homestead. The scheme as a whole thus provides employment to more than 2,000 people.

Sugar is key in the Swazi economy and dominates the country's exports. All classes of Swazi society are represented in the sugar industry, from directors or artisans to the majority employed as unskilled labourers. About 14 per cent of the country's population is estimated to be wholly or partly dependent on employment in the sugar industry.

Increased incomes

Mkhabela argues that VIF farmers make more income than those on SNL.²⁵ During the days of good sugar prices farmers at VIF benefited from high sugarcane prices and were the envy of many Swazi farmers. High ownership of cars by scheme members was an indication that large profits were being made in the scheme.

Low ownership of particular assets, like cars and tractors, today indicate that all is not so well in the scheme compared to the past. About 42 per cent of the scheme members have cars while only 18 per cent have tractors. However, these figures still show the scheme members faring better than off-scheme where only 3.3 per cent of all SNL farmers own one or more tractors²⁶ and probably a lot less than 40 per cent own cars.

About 47 per cent of the farmers feel they have benefited from joining the scheme, but only 35 per cent feel that the scheme has lived up to their expectations. Consequently, only 41.7 per cent of the farmers state that they have no intention of leaving the scheme.

The scheme does not seem to be highly profitable any more. This can be expected in the light of the low sugar prices in the last few years. However, one needs to take a close look at the figures and compare the profitability of sugarcane with other crops.

Farmers at VIF do not keep proper farm records, making it difficult to calculate profit. Figures obtained from the survey are inconsistent and incomplete, making calculations based on them impossible. However, the Mananga Management Training Centre (Mananga) has been involved in teaching scheme members the basics of farm record keeping since 1984. Figures obtained from them are more reliable than those based on the survey figures.

For the period 1985/86, Mananga calculated the gross margin on sugarcane in the scheme to be

E 3,006 per hectare.²⁷ This is comparable to the gross mean calculated by VIF management for the 1986/87 season of E 3,830 per hectare for the scheme members.²⁸ This is lower than the average of E 4,600 per hectare for farms operated by VIF management over the same period. Sugarcane is quite competitive compared with other crops produced in the scheme according to the 73.3 per cent of the farmers who felt that sugarcane was profitable. Gross margins for the 1985/86 season show E 2,270 for green maize, E 5,060 for onions, E 670 for cotton, E 1,533 for cabbages and E 3,006 for sugarcane per hectare.²⁹

At Mphetseni the gross income per five-year crop cycle was estimated at E 6,024.17.³⁰ Farmers at Mphetseni scheme seemed to be making profits. Ownership of cars by 67 per cent of the scheme members supports this. The prices of pineapple in the world market are currently high. Since there are no other crops produced in the scheme, no comparison could be made. Due to the chemicals used in the pineapple production the land is useful only for that crop, as growing other crops would require the land to be left fallow for about three years.

About 78 per cent of the farmers feel that pineapple growing is profitable and 77.8 per cent have no intention of leaving the scheme because they feel they make more money in the scheme than they would make outside. Of the sampled farmers, 67 per cent feel the scheme has lived up to their expectations, while all the farmers indicated that they have benefited from joining the scheme.

Guaranteed supply

VIF provides only a small fraction of the total sugarcane supply to the Mhlume Sugar Mill. For this portion of the supply the mill does not have to bother about organizing production or managing the required labour.

VIF management controls the quality of the output, supplies the inputs and inspects the crop to control diseases. Extension workers on VIF management's payroll provide advice to ensure the quality is maintained. Quantity supplied is controlled through the quota given to the scheme. To make the quantity control more effective farmers are obliged to put at least 70 per cent of their land into sugarcane production. Management regulates the supply by undertaking the harvesting functions. This way management is able to provide cane when the mill needs it.

Farmers at Mphetseni undertake the production activities. The farm section of the factory works with the scheme to control diseases. A new produc-

tion technology—such as new seeds and chemicals—prescribed by the factory is communicated to the scheme by the farm section. The farm section controls and guarantees delivery of pineapple fruit to the factory through forced ripening.

Farmers are not allowed to sell pineapple to other buyers, and little is actually sold to Mahlanya fresh fruit market. The pineapple sold to this market is often of low grade. Thus virtually all pineapple produced in the scheme finds its way to the factory. Thus the quantity and quality of the pineapple produced is guaranteed to Swazican.

Spread of investment

Farmers at VIF benefit from the scheme in many ways. With the extended family situation in Swaziland the 263 homesteads who directly benefit from the scheme also pass it on to relatives. The scheme is located in rural areas where the sugar industry is based. The sugar industry has prompted multinationals, like CDC, to invest in infrastructure in the rural areas. The VIF scheme, if anything, has justified provision of infrastructure in the area. In the scheme there is a primary school, high school, clinic, post office and a shopping centre. However, there are still improvements needed at VIF, such as to provide clean piped water and improve sanitary services.

Swazican is located in the Malkerns Valley. Located around the factory is a clinic, post office, primary and secondary schools, shopping centre and police station. The Malkerns area is well connected to the rest of the country by paved road.

Company profits

The first company operating the pineapple cannery, John Heath Cannery, faced financial problems; in 1968 the cannery went into liquidation. Despite the fact that a rescue operation was undertaken by the Swaziland Government and local businessmen, the growers were not paid for the pineapples they had delivered for quite some time. In 1979 and 1980 the cannery, under ownership of Nestlé South Africa, recorded losses as a result of low prices of pineapples and rising production costs.

From 1982 the cannery was taken over by Swaziland Fruit Cannery (Pty) Ltd. The cannery recorded losses in its first year, but from 1983 onwards it has made profits. Future prospects for the company look bright as prices are not expected to decline for a while and the world markets are expected to continue being stable.

In contrast, while CDC makes positive profits

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in projects undertaken in the country the VIF scheme is recording losses. The losses are partly caused by low sugar prices experienced in the last few years. However, prices are not expected to decline further. Problems in the scheme, specifically caused by farmers refusing to sign joint accounts, have led to over E 1 million being tied up in the bank.

This does not seem to cause CDC great concern. The losses incurred at VIF are offset by profits made in other CDC projects. While it would be good to earn positive profits from VIF the losses are not expected to result in CDC's withdrawal.

Local participation in scheme management

Members' participation in the project is vital to the scheme's success. Participation could come in the form of a farmers' association being involved in the management, as clearly illustrated in studies.

At VIF the farmer's co-operative, registered under the Cooperative Societies Act 28/1964 in 1967, is currently dormant. If anything the co-operative exists only in name, and 40 per cent of the farmers sampled reported that there was no co-operative. Only one third of the sample were members of the co-operative.

The co-operative has been faced with poor management practices that are common in developing countries, which tend to discourage farmers from joining. Some of the farmers have viewed the co-operative committee as working for the VIF management against the rest of the farmers.

There seems to be general agreement from the farmers, VIF management, Government officials and Tibiyo that revival of the co-operative is vital. The co-operative should undertake some of the functions currently provided by VIF management and is expected to provide this at a lower cost. Among the services that it could provide is running the farm input depot. It would be easy for farmers to understand the loan operations if some of them undertake the depot's management. Currently farmers feel they get overcharged for the inputs.

If well organized, the co-operative could arrange transportation of sugarcane to the mill by having transport facilities available to farmers on a hire basis. The co-operative could also run the equipment hire pools.

The failure of the farmers to participate in the management has led to the root problem of the scheme: farmers feel that the management is exploiting them by charging high prices for all the service provided. On the other hand, VIF management can not help but charge such prices if it is to

provide the services efficiently to the scheme members.

The Mphetseni scheme is a qualified success story,³¹ mainly attributed to the farmers' participation in management. The co-operative society manages the scheme with no outside help.

The co-operative began running the scheme late in 1982. At the time of the takeover, the scheme was facing problems similar to those VIF is currently facing. Farmers felt that the management was cheating them or overcharging them for services provided, and failed to understand how some of their expenses were accumulating. There was a high level of indebtedness. Lotringer partly blames this indebtedness on rising administration and management costs.³² Rising costs of production also contributed since there was no corresponding increase in price of pineapple fruit. Farmers had no recognized representation in the setting of prices.

The co-operative now runs the input and farm implements depot and it also provides loans to members. The executive of the co-operative is elected every two years and meets once a week to discuss farm operations. Through the co-operative farmers have been able to come up with a unique labour hire system³³ that ensures timely performance of labour-intensive activities. The factory does not have to deal directly with each member when introducing new technologies, techniques, delivery schedules or payment for sale proceeds.

Since the co-operative took over the scheme has made progress. The co-operative has repaid loans and has successfully acquired the right of ownership in the land under the scheme. Factory management has reported that many of the farmers have repaid outside loans. Farmers are making profits from the operations. The small size of the scheme makes it possible for the committee to run the scheme smoothly on a part-time basis without pay.

Constraints to Replicability

The pineapple market is not only close to the production centre but is virtually the only one, as the fresh fruit market is insignificant. This monopoly of the market makes a major contribution to the relative success of the pineapple scheme. The farmers' co-operative is managing the scheme successfully and has the confidence of the scheme members. The small size of the scheme—in terms of membership—makes it easier to manage. However, a possibility of having a similar scheme where the co-operative—not the individual farmers—has title to land, does not appear bright.

The problem of land tenure associated with VIF makes it inadvisable to replicate such schemes elsewhere in the country. On Swazi Nation land a contract of lease is out of the question as it is not possible for the contracting firm to evict farmers who breach the contract on the land allocated by a chief. In addition, farmers fail to understand the need to pay for irrigation water and other infrastructure provided in a scheme on SNL as, by definition, such are provided to farmers at no charge.

Although not directly coming out of the above analysis we suggest that a contract of sale and delivery of a product between a processor and farmers on SNL can be considered. Under this system farmers would use the land already allocated to them by the chiefs, thus eliminating problems associated with settlements.

Where the principal crop requires setting up costly infrastructure which farmers would be expected to pay for, such as irrigation, such projects should be restricted to TDL and crown land. On such land the farmers would understand the need to pay for the infrastructure and there would be no problem effecting a contract of lease in addition to one of sale and delivery.

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Notes

1. Neocosmos and Testerink, Contract Farming in Swaziland.
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3. Levin, *Land Tenure Arrangements*.
4. Crush, The genesis of colonial land policy, pp. 73-88.
5. Silberberg and Schoeman, *The Law of Property*.
6. Armstrong, *Legal Aspects of Land Tenure*.
7. Tibiyo Taka Ngwane and Tisuka are non-governmental organizations formed by Royal Act to help promote local development.
8. Armstrong, *Legal Aspects of Land Tenure*.
9. Ibid.
10. Ibid.
11. Tuckett, *Vuvulane Irrigated Farms*.
12. Water charges from May 1987 to April 1988 were E 14.94 per acre.
13. The currency of Swaziland is the emalageni. E 1 = US\$0.492.
14. Government of Swaziland, *Fourth National Development Plan*, p. 145.
15. Mkhabela, Modernization and change, p. 130.
16. Sithole, Factors influencing the reduction in maize acreage.
17. Government of Swaziland, *Third National Development Plan* and *Fourth National Development Plan*.
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19. Tuckett, *Vuvulane Irrigated Farms*.
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21. Guma and Simelane, *Small Farmer Credit*.
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23. Government of Swaziland, *Agricultural Census*.
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25. Mkhabela, Modernization and change.
26. Government of Swaziland, *Agricultural Census*.
27. Preliminary findings given by Lewis (then lecturer at Mananga).
28. Figures provided by VIF project accountant.
29. It must be noted that the sample for some crops was very small.
30. Government of Swaziland, *Agricultural Census*.
31. It may be too early to conclude that the scheme is a success under the cooperative. Moreso, there are indications that there might be problems in raising enough funds to replace obsolete equipment.
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33. See the forthcoming main report for detailed explanation of this system.

Outgrower Schemes in Tanzania: The Case of Tea and Sugarcane

Ernest N. Maganya*
Samwel Chambua**
Theodora Hyuha***

*Institute of Development Studies
University of Dar es Salaam, Tanzania*

Abstract

This report analyses the existing relations between growers, the companies and the state in outgrower schemes in Tanzania. That extension services, credit and inputs are predominantly supplied by state institutions, which also control the marketing institutions, is identified as one of the main reasons why outgrower schemes in Tanzania have not been very successful. Policy options necessary to create more effective and democratic relations between the growers, the companies and the state are suggested.

Introduction

This report is part of a regional study in East and Southern Africa on the contract and outgrower farming system. This study looks at the relations between the core farm and/or processing factory and the outgrowers and the system's ability to improve agricultural production and the welfare of the outgrowers.

Tanzania's is the only country in the region without a typical contract farming system. Contract farming involves contractual, and therefore legally binding, relations between a group of outgrower household producers, a core processing plant and/or a corporate plantation (estate or core farm). Contractual concerns include the quality of agricultural produce, delivery of inputs, provision of extension services and marketing. Since production systems operate within political boundaries, the state is an extremely important actor in any viable contract farming system although its role remains largely regulatory.

In Tanzania, as we shall discuss in greater detail, the only farming system that approximates contract farming is what is loosely referred to as "outgrower schemes". These involve an interplay of three actors—the state, outgrowers, and the company—in the most important stages of agricultural production, transportation, marketing and processing. However, there are no legally-binding contracts. The intervention of the state in extension, transportation and marketing processes would seem to pre-empt any viable contract farming system.

The study focuses on sugarcane and tea cultivation

and processing for three reasons. First, they are the only crops in which the outgrower farming system is practised on a fairly extensive scale and has been practised for a sufficiently long period to allow for accurate and generalisable scientific enquiry. Second, the end-products of the two crops—black made tea and sugar—have got a strong urban demand which, by virtue of its political weight, has tended to influence state interventionist policies in producer price determination, control of extension services and marketing. Third, both crops have the potential to earn foreign exchange, although it is tea that was introduced, particularly among smallholder farmers, to increase foreign exchange earnings. The predominance of the state in sugarcane production and processing is largely due to the need to reduce sugar imports. All the sugar processing factories are, primarily import substitution industries. This is not, of course, peculiar to Tanzania. Even Kenya, the most successful African country in sugar production, was motivated by import substitution when it began encouraging sugarcane cultivation. Kenya still processes sugar largely for home consumption.¹

Basic Issues in Contract Farming and Outgrower Schemes

Policy and institutional framework

A country's overall agricultural policy determines the nature of the relationship between the outgrowers, the core farm and processing factory and the state. As a general rule, where state inter-

vention dominates the most important stages of crop production, processing and marketing it is difficult to establish a contractual relationship between the outgrowers and the core farm or processing factory. This is especially so where the state hopes to maximize its foreign exchange capacity by having firm control over the conditions of household production and sale of agricultural produce. This was the case of Tanzania, particularly between 1975 and 1986, and remains so today.²

Alternatively, where state intervention in the conditions of peasant household production is limited to the most essential roles, a better atmosphere is created for the core farms to enter into legally-binding and enforceable contracts with the surrounding outgrowers. This conducive atmosphere does not necessarily mean that the conditions of household production become freer, or that the outgrowers determine the conditions of their existence any better than where state institutions dominate. Many writers have shown, arguing from different perspectives, the "enslaving" situation of farming contracts entered into with multinationals, even in the best conditions where the outgrowers have a fairly effective association like the Mumias Outgrowers Company of Kenya.³

Nevertheless, it is true that contract farming schemes with influential outgrower associations have tended to produce better results in terms of increased exports (e.g., Kenya Tea Development Authority-KTDA) and meeting the home market demand of important urban consumer items as sugar (Mumias Sugar Company of Kenya) even though this success might have been accompanied by immense social stress.⁴

In Tanzania, the state is omnipotent in the economy's productive and distributive functions. The state influences all forms of household production, whether in villages far from core farms or in those surrounding the core farms. Peasant household production has moreover been affected by frequent institutional changes, particularly in marketing, input distribution and credit provision.

There are three important phases of such major institutional changes. The first main institutional change took place in the 1970s, with the dissolution of the local Government Councils in 1972 and dissolution of the Co-operative Unions in 1976. The Co-operative Unions had for many years provided an important interface between peasants (including the outgrowers) and the state in the key function of input distribution, marketing and provision of loans. Up to 1976, the government, through the Ministry of Agriculture, had been re-

sponsible for providing extension services to peasants both within and outside the outgrower schemes.

With the dissolution of the Co-operative Unions government institutions dominated all spheres of agricultural production and distribution until 1984. The Marketing Boards of the various export crops that were responsible for the export market were expanded and took over the Co-operative's functions in distributing inputs, providing extension services, purchasing and selling export crops and providing loans. Of more interest to outgrower schemes was the transfer of extension services from the Ministry of Agriculture to the Crop Authorities (formerly known as Marketing Boards) and the transfer of other key services (e.g., internal transport and purchase of green tea leaves) from the Co-operative Union to the Crop Authorities.

The rapid and extensive intervention of the state in almost all spheres of agricultural production, brought with it immense problems. The Crop Authorities' increasing over-head costs began to eat into the producer prices of the farmers, widening marketing margins. Increased borrowing from the banks to run the loss-making parastatals fuelled inflation. In addition, the often grossly over-valued exchange rate did not allow the state any leeway to increase producer prices. The result was a slow withdrawal of the peasant commercial producers from the official market into the parallel market (where alternative markets existed). For most export crops, farmers slowly but steadily diversified their production away from traditional export crops to food crops and fruits with high internal demand.

The resultant foreign exchange crisis and general decline in agricultural production forced the policy-makers to change their approach (Table 1). In 1982 there were further rapid policy changes. The Co-operative Unions and local government councils were reinstated; subsequent years saw other major policy changes like the June 1986 Economic Recovery Programme. The Crop Authorities returned to their old role of dealing with the external market, and the local currency has been devalued, temporarily enabling the state to push up nominal producer prices.⁵

Most important for the outgrowers, particularly of tea, the responsibility for extension services has gone back to the Ministry of Agriculture and Livestock Development while the other functions of marketing, providing inputs and loans are slowly going back to the Co-operative Unions as they consolidate themselves. For sugarcane, however, the Sugar Companies—which are under Sugar Development Corporation (SDC)—are still providing

most of the essential services although they are considering handing over the provision of extension services to the relevant ministry due to increasing losses in part due to high over-head costs.⁶

A key policy aspect of agricultural production should also be considered here: the land tenure system. In most countries where contract farming has led to significant increases in production the land tenure system seems to have played a significant role—although not always been beneficial to the outgrower. Where there is a freehold land tenure system or a "controlled" freehold land tenure system, as in Kenya, a core farm can sub-leased to the growers. In this context, the land sub-leased to the growers becomes a key component of the contract. Continued use of the land depends on the strict observance of all aspects of the contract. This arrangement, of course, forces the outgrower to use the sub-leased land primarily for cultivating the designated crop, failing which the use of the land is forfeited.

In Tanzania, the state is the overall owner of land and has allowed two forms of land tenure to operate: the deemed right of occupancy (traditional and based on use-right) and the granted right of occupancy (granted by the state for commercial purposes).⁷ Most of the outgrowers are governed by the deemed right of occupancy and the company has no legal authority whatsoever on their land.

This land tenure system has both advantages

and disadvantages. For the sugar companies or the government-owned tea processing factories it is not easy to enforce good agricultural practices. Outgrowers can refuse to implement recommended practices and yet retain their land. On the other hand, this arrangement is beneficial to the outgrower particularly when poor macro-economic policies (such as regarding producer prices) and the general inefficiency of the companies leads to poor returns to labour of the outgrowers. In this case, they can always resort to other income-generating crops and non-farm activities without losing the right to use the land they own. However, outgrowers owning land through use right (i.e., without any legally-binding title deed) can always lose their land to a more powerful farmer or even to the state.

These rapid institutional changes and the vague land tenure system in Tanzania are reflected in the performance of outgrower schemes. The implication of these issues will become clearer, particularly when evaluating outgrower scheme performance.

The crop production processing system

While almost all crops, whether for domestic consumption or export, can benefit from outgrower-core farm relations, there are certain crops which, by virtue of their biological qualities and agronomical demands, stand to gain more from these relations. Tea and sugarcane are two of the few crops

Table 1: Mainland Tanzania's Foreign Trade Balance (US\$ Millions)

Year	Exports	Imports	Balance	Balance as Per Cent
1973	367	495	(128)	35
1974	403	753	(350)	87
1975	376	770	(394)	105
1976	490	638	(148)	30
1977	546	750	(203)	37
1978	477	1144	(667)	140
1979	537	1100	(562)	105
1980	506	1219	(713)	141
1991	554	1161	(607)	110
1982	415	1113	(698)	168
1983	380	815	(437)	115
1984	388	874	(486)	125
1985	286	999	(713)	249
1986	348	1047	(700)	201
1987 ^e	380	1150	(779)	203

e. Estimated

Source: Bank of Tanzania, 1987.

whose nature can greatly benefit from a well-functioning outgrower system.

Sugarcane production and processing. Sugarcane grows best in tropical conditions, especially with the following environmental conditions: high temperatures (in excess of 21°C); fairly evenly distributed rainfall of about 1500 mm per annum;⁸ high natural soil fertility or fertilizer application; and good drainage. It takes from twelve to fourteen months from seed cane planting to harvest. Cane from ratoons is grown for ten to twelve months, and is limited to four ratoon crops.

Cane growing involves land preparation (including providing drainage), cane-seed preparation, planting, weeding (twice per year), harvesting (cane cutting), and transporting (haulage) the cane to the factories. Outgrowers are also encouraged to provide firebreaks around their cane plots to avoid accidental fires.

Sugarcane cultivation is clearly labour intensive. Outgrowers mostly use family labour to plant, weed and clear land for firebreaks. For land preparation (fallowing), harvesting and haulage the majority depend on the core farm or company. The companies provide these services on interest-free credits which are recovered annually after cane sales. An efficient transport system is essential since cane has to be processed the same day it has been harvested. If more than twenty-four hours elapse from cutting to processing, internal chemical reactions take place making renderment (sugar recovery) and crystallization difficult and inefficient. To avoid this, the company has to guarantee available transport for those outgrowers who need it once it has agreed to buy (and cut) the cane. Table 2 shows the costs involved for the outgrower.

Tea production and processing. Tea grows well in areas with a cool climate and adequate rainfall. Annual rainfall in tea-growing areas in Tanzania ranges from 1,000 mm to 2,500 mm. Like sugarcane cultivation, tea cultivation is also labour inten-

sive, particularly during the period of establishment. Plucking consumes a significant amount of the outgrower's labour. According to a study made in the four areas with tea outgrowers by the Marketing Development Bureau (MDB) of the Ministry of Agriculture, plucking takes up to 53 per cent of the growers' labour.⁹

Apart from the labour-intensive nature of plucking, the plucked green leaves must be carried to collection points by the growers. From there they are transported as soon as possible to the processing factories by the companies or the government. The proximity of the collection points to the farm and efficient transportation of the green leaves to the factory are important in determining the quality of the made tea. Green leaves cannot withstand high temperatures for a long time and any delay will reduce their quality.

Another important factor in ensuring high quality leaves is the constant use of fertilizers, particularly fertilizers rich in nitrogen compounds. Applying 1 kilogram of nitrogen increases yields by about 10 kilogram of made tea equivalent.¹⁰ It is therefore crucial that the existing institutional set-up guarantees timely and adequate supply of fertilizers.

The firm, growers, and contracting relationship

The case for tea. Tea in Tanzania is mainly grown and processed on large-scale private farms or by companies with factories primarily established to process green leaves from their own farms. In rare cases private factories process the green leaves from smallholders where smallholder farmers are located far away from the state-owned processing factories. Of the estimated 18,7000 hectares currently under tea cultivation, 44 per cent is managed by private estates, 7 per cent by the Tanzania Tea Authority (TTA, a parastatal responsible for tea) and 49 per cent by smallholders. Private estates produce about 70 per cent of the

Table 2: Services Offered to Sugarcane Outgrowers and Associated Costs, 1986/87

Type of Service	Price (TSh)
Land preparation ^a	1,500 per acre
Harvesting/cutting	40 per tonne or 40 per day per cane cutter
Loading and transport	170 per tonne
Cane seed ^b	150 per tonne (up to 11/87); 300 per tonne (since 11/87)
a. Clearing, tilling and harrowing.	
b. Including loading and transport.	

Source: Field Officers, Kilombero and Mibwa, 1987.

national tea production, state-owned estates about 2 per cent and the smallholder about 28 per cent.¹¹

Almost all the tea outgrowers own small pieces of land. The national average smallholder tea farm is about 0.3 hectares, whereas in the study area the average farm size was 0.6 hectares (for Rungwe and Lupambe) and 0.28 hectares for Usambara in Tanga Region (Table 3).

The tea farming system in Tanzania can be summarized thus:

1. Large-scale private estates with processing factories
2. Large-scale private estates (core farms) with processing factories and outgrowers structurally linked to government services except for processing
3. Large-scale state-owned estates with processing factories and outgrowers

4. State-owned processing industries and outgrowers

The first type is the dominant farming system. Case studies of the second and fourth type were conducted: the Dindira Tea Estates Company (owned on an equity sharing basis between the Government of Tanzania and a London-based private company), and the Ambangulu Tea Estate Company, a fully privately-owned company. The two companies are located in the Usambara Mountains in Tanga Region. For comparative purposes, research was also conducted in Rungwe District whose outgrowers supply green leaves to the factories owned by the Tanzania Tea Authority (a parastatal) and has no tea estates.

The case for sugarcane. In Tanzania the state dominates sugar production. Sugarcane is grown mainly as an estate crop by four factories: the Tanganyika Plantation Company (TPC) in Kili-

Table 3: Land Utilization per Household in Rungwe (Hectares)

Land area	Tea	Coffee/Beans	Maize/Beans	Misc.
0.1 - 0.5	7	30	18	11
0.6 - 1.0	18	10	17	—
1.1 - 1.5	16	2	7	—
1.6 - 2.0	5	4	5	—
2.1 - 3.0	—	—	—	—
3.1 and above	2	2	—	—
Average	1.01	0.77	0.79	0.21

Source: Survey Data, May 1987.

Table 4: Size of Outgrower holding for Cane, Paddy Rice and Maize, Kilombero and Mtibwa

Land Area (ha.)	Sugarcane		Paddy		Maize	
	Frequ.	Per Cent	Frequ.	Per Cent	Frequ.	Per Cent
0.0 - 1.4	39	39.8	45	45.9	38	38.8
0.5 - 2.9	28	28.6	33	33.7	39	39.8
3.0 - 4.4	16	16.3	10	10.2	11	11.2
4.5 - 5.9	1	1.0	2	2.0	1	1.0
6.0 - 7.4	2	2.0	1	1.0	5	5.1
7.5 - 8.9	2	2.0	3	3.1	2	2.0
9.0 - 10.4	3	3.1	0	0	2	2.0
10.5 - 11.9	0	0	0	0	0	0
12.0 - 13.4	2	2.0	4	4.1	0	0
13.5 - 20.19	5	5.1	0	0	0	0
Average size	3.4	99.9	2.2	99.9	2.2	

Source: Survey Data, Kilombero and Mtibwa Outgrower Schemes, 1987.

manjaro Region, Kilombero Sugar Company (KSC) and Mtibwa Sugar Estate (MSE) both located in Morogoro Region, and the Kagera Sugar Limited (KSL) in Kagera Region. This study was based on KSC and MSC.

Outgrower contribution to total cane supply and equivalent processed sugar is insignificant. The outgrowers contribute only 10 per cent of the total supply of sugarcane in the country, and are only associated with KSC and MSE.

Farms cultivated by sugarcane outgrowers are generally small. In the study area, about 70 per cent cultivate 3 hectares or less, and only about 7 per cent were larger than 10 hectares (Table 4). At the national level, it is estimated that outgrowers cultivate 4,505 hectares out of a total of 23,736 hectares—about 19 per cent of the total land area that was expected to be cultivated in 1987/88.¹²

Sugarcane outgrowers have more links with the company than tea outgrowers, although relations are not contractual. The company is responsible for land preparation, providing cane seed, harvesting, haulage and extension services.

Key Determinants of Successful Outgrower Schemes

Five key determinants of successful outgrower schemes can be used to measure their performance. For both tea and sugarcane cultivation, there are agronomic practices and related services that are essential if good results are to be guaranteed. Important factors that are common to the two crops are discussed below.

Attractive producer prices

Subsistence farmers decide to cultivate so-called cash crops because of the expected cash income that they need in order to buy industrial goods (incentive goods). When there is a poor harvest of subsistence crops cash crops enable them to meet their households' food requirements. Beyond earning a monetary income, peasants are less attracted to cash crop cultivation and will either go back to cultivating subsistence crops or other crops that will give satisfactory returns to labour invested. The question of real as opposed to nominal producer prices, therefore, is extremely important for any successful outgrower scheme.

Provision of fertilizers and extension services

For both sugarcane and particularly tea cultivation, regular application of fertilizer is important.

Any marginal increase of fertilizer use will lead to significant productivity increases. It is therefore crucial that there is an efficient institutional set up that can guarantee the regular supply of fertilizers and essential chemical inputs, like weedkillers, and at reasonable prices. Agricultural practices which can be greatly enhanced by relevant and efficient extension services are another important factor. The rapid institutional changes and near absence of extension services from the companies or core farms has made extension services amongst outgrowers erratic and largely ineffective.

Efficient support services

Since both the cultivation of tea and sugarcane is labour intensive, outgrowers cannot perform all the necessary duties without support from either the company (for sugarcane) or the government (for tea). Given the perishable nature of the crops, prompt and efficient transport becomes one of the most important support services. This depends on several factors, such as the ability of the government or company to purchase and maintain a sufficient fleet of lorries, construct enough high quality feeder roads and establish enough collection points to reduce the distance from the farm to the collection points.

Credit to outgrowers

Sugarcane cultivation—whose cycle does not exceed five years—can only be maintained by a constant supply of credit. Both the establishment costs and maintenance costs (of the ratoon crop) are extremely high and cannot be met by the growers' resources alone. This also applies to tea. Although the period after the establishment phase is very long, the constant application of fertilizers and the extremely labour-intensive nature of tea plucking all demand cash beyond what most growers can retain at any one moment.

Under contract farming systems, credit requirements are usually taken care of by the company. In Tanzania, this is generally not the case and credit provision has to go through a chain of bureaucratic channels before it reaches the outgrowers. Even then, it is mostly in the form of inputs and services.

Factory efficiency in processing

The degree of capacity utilization of factories processing green tea leaves and sugarcane has an important effect on demand. Where capacity is under-utilized due to constant machinery breakdowns due to old age, rigid foreign exchange regulation preventing the company from replacing old

parts promptly, or management inefficiency, the capacity of the company to purchase the raw materials from the grower will be negatively affected.

Evaluation of Performance

The previous section has identified important determinants of a successful outgrower scheme. How these determinants operate in the context of Tanzania's political economy follows.

Fulfilling the objectives of the government, company and grower

In any outgrower or contract farming system the three important actors—government, company and outgrowers—enter the outgrower farming stage with specific roles and expectations. The success of any outgrower scheme will depend on how the interests of any one of them are met, which is thus the focus of the following evaluation.

Government objectives. The government had three basic objectives in encouraging the small-holder to join outgrower schemes whether through settlement schemes (Kilombero and Mtibwa), by encouraging subsistence peasants to cultivate tea and sell green leaves to the nearby private core

farms and factories (Dindira and Ambangulu), or by establishing processing industries and encouraging the surrounding peasants to grow tea (Rungwe). These objectives were to:

- enable the government to increase its foreign exchange earning capacity, particularly from black tea export
- establish import substitution sugar industries and thereby save a significant amount of foreign exchange by reducing, or finally stopping, sugar importation
- broaden the domestic consumption of sugar and black tea thereby increasing the tax base of the country through sales tax

Of the three objectives, only the last has been fully achieved. Tanzania continues to be a net importer of sugar and still, due to inadequate foreign exchange, the country cannot import enough sugar to satisfy internal demand (Table 5). While Tanzania has been able to meet the internal demand for black tea, its production has been on a downward trend, particularly after the 1982/83 season. This has made it difficult to realize the first objective: increasing the foreign exchange earning capacity of the country. For example, the TTA was

Table 5: Sugarcane and Sugar Production, 1974-83

Season ^a	Sugarcane ^b ('000 tonnes)			Sugar		
	State Farms	Outgrowers	Total	Production (tonnes)	Consumption ^c (tonnes)	Consumption per capita ^e (kg.)
1974/75	986	180	1,666	102,000	106,011	6.98
1975/76	1,066	200	1,266	96,000	102,478	6.54
1976/77	1,180	1,091	1,289	112,000	114,444	7.08
1977/78	1,003	116	1,124	105,000	111,546	6.69
1978/79	1,169	197	1,366	123,000	127,000	7.42
1979/80	1,180	210	1,390	119,000	112,282	6.32
1980/81	854	193	1,047	114,067	115,961	6.22
1981/82	1,135	203	1,338	124,326	120,629	6.26
1982/83	1,090	113	1,203	101,996	93,179	4.69
1983/84	1,372	160	1,532	131,525	108,369	5.28
1984/85	1,148	105	1,253	108,102	111,433	5.27
1985/86	1,003	104	1,107	100,187	95,379	4.36
1986/87	991	72	1,065	94,815	109,462	4.84

a. July to June season

b. Sugarcane with 10.5 sucrose content

c. Including Zanzibar

d. National sugar consumption estimated at 300,000 to 350,000 tonnes per annum. Tanzania has an export quota of 10,000 tonnes per annum to the EEC.

e. Tanzania Mainland only

Source: Sugar Development Corporation (SDC).

able to buy 82,240 tonnes of green leaves during the 1982/83 season, but the amount had declined to 64,694 tonnes by 1986/87, a 23 per cent decrease.¹³

Company Objectives. When a company joins a contract farming system or outgrower scheme, its main objective is to maximize profit, in part by obtaining high quality inputs from outgrowers at reasonable prices. The other objectives derive from this one. That the outgrower may also gain from this arrangement (by way of better extension services, provision of labour-saving services, inputs, etc.) are all linked to this overriding objective of the company.

For the company to realize high profits, however, many factors have to be taken into account both internal and external to the company's estate and/or processing factory. This is even more so in Tanzania where overall macro-economic policies continue to have much influence on sectoral operations. Such factors include the operational efficiency of the firm itself, ex-factory prices as set by the government, the level of world market prices and last, but not least, availability of foreign exchange needed to buy spare parts and buy new machines.

Among the two crops studied, the performance of the sugar industry has been unsatisfactory for quite some time. Three estates, including two in the study (Kilombero, Mtibwa) and the Tanganyika Planting Company have operated at a loss from 1984/85. The total loss of the three estates was some TSh 155 million in 1985/86, and TSh 60 million in 1986/87. Expressed in shillings per tonne of sugar produced, the deficit amounted to TSh 270 in 1984/85, TSh 1,601 in 1985/86 and TSh 1,631 in 1986/87.¹⁴

Capacity utilization as one measure of the efficiency of the sugar companies has also not been satisfactory. For the four state-owned companies, from 1984/85 to 1987/88 the following levels of capacity utilization have been reached: 68.73 per cent, 60.35 per cent, 59.52 per cent and 64.06 per cent.¹⁵ The performance of the two companies under study (Kilombero and Mtibwa) has also not been encouraging. While the two companies tended to perform relatively well, particularly between 1980/81 and 1984/85, their performance declined during the 1986/87 season and the long-run view (1970/71 to 1987/88) is very bad.

The average capacity utilization for Mtibwa Sugar Estate (MSE) Company for both sugar produced and cane crushed for the seasons 1980/81 to 1984/85 was 100.6 per cent and 100.2 per cent, respectively, reflecting both efficiently functioning

processing machines and sufficient supply of sugarcane from the company's estate.¹⁶ For 1986/87, however, capacity utilization fell to 49 per cent for both sugar produced and cane crushed. The long-run view of capacity utilization (1970/71 to 1986/87) is 56 per cent for sugar produced and 66.6 per cent for cane crushed.¹⁷

The performance in this area for one factory of the Kilombero Sugar Company (KSC), the Msolwa factory, is even poorer than the MSE, particularly from 1980/81 to 1986/87. The long-run capacity utilization for cane crushed between 1970/71 to 1986/87 was 69.3 per cent and that for 1980/81 to 1986/87 was 52.8 per cent. This is comparable to the other factory of the KSC, Ruembe factory, whose capacity utilization for the years 1977/78 to 1986/87 was 66 per cent.¹⁸

The above analysis shows that the objectives of the sugar companies—in particular of profit maximization—have not been fully realized. There are several reasons why this has been so, of which two are particularly relevant. The first, and perhaps the most important, reason is the conflicting interests of the profit maximizing objective of the companies and the objective of the state to provide sugar at affordable prices to the largely urban-based consumers, while at the same time making the sugar industry contribute to the state revenue through sales taxes. This has tended to keep the ex-factory prices of the company below the cost of production. The most recent policy changes might increase the profitability of the companies. These include a significant increase in the retail price of sugar, the reduction of sales tax from 60 per cent to 33.9 per cent and a substantial devaluation of the shilling.

The second major cause of the companies' poor performance has to do with the nature of the relations between the outgrowers and the companies. The absence of a synchronized supply of sugarcane from the outgrowers and core farms (of the companies) has led to either inadequate supply of sugarcane (the case of the KSC) or to occasional over-supply cane (the case of the MSE).

The tea processing companies have performed slightly better in the area of profit maximization although this performance is far below world standards. Available data for profit and loss accounts of the TTA-owned companies from the years 1984/85 to 1986/87 show modest profit margins. The total profit/loss account was TSh 15.28 million for 1984/85, TSh -49.18 million for 1985/86, and TSh. 54.14 million for 1986/87.¹⁹ The rather low capacity utilization rates of the privately-owned companies suggests that their profit margins are indeed very

small.

The capacity utilization of the Dindira tea processing factory has ranged between 79 per cent (for 1979/80) and 45 per cent (for 1985/86). The performance for the period 1982/83 to 1985/86, averaging 46 per cent capacity utilization, has been particularly bad.²⁰ Capacity utilization for the Ambangulu tea processing factory for the period 1981 to 1985 averaged 53.4 per cent.²¹ In comparison, capacity utilization for the two TTA-owned factories in the research area (Katumba and Mwakaleli) is impressive, particularly so for the Katumba factory. The average capacity utilization rate for the years 1978/79 to 1986/87 was 90 per cent for Katumba factory.

The rather low capacity utilization rates for the two privately or semi-privately owned processing factories can mainly be explained by their inability to secure enough foreign exchange to buy spare parts and new machines. In this respect the TTA-owned factories are in a more favoured position although their contribution to total made tea for the year 1985/86 was only 26 per cent. One hopes that the recently re-introduced foreign exchange retention schemes of up to 50 per cent of foreign exchange earned will ease this problem and enable the privately-owned factories attain high capacity utilization rates.

Growers' objectives. The main objective of subsistence farmers when joining an outgrower scheme is to earn cash income. While it has been difficult to calculate growers' income earned due to the usual unreliability of rural income budgets, real

producer prices for both green leaves and sugarcane over time can provide a rough indication of how the growers fared.

For many years now, producer prices for tea have been very low. This can be appreciated from Table 6 in which current prices are compared to real prices. Real producer prices for sugarcane have been particularly low. For example, the average price per tonne of cane with 10.5 per cent RS (Recoverable Sucrose) for 1978/79 at 1985/86 constant prices was TSh 567. The price had declined to TSh 370 by 1987/88, even though in 1987/88 cane price increased by 30 per cent.²²

The proportion contribution to total green leaves and sugarcane processed by the outgrowers and the companies is an important indicator of the extent to which the cash earning objective of the outgrowers was fulfilled.

Of special interest to this study are the relations between the outgrowers surrounding the privately-owned estates: the Dindira and Ambangulu estates companies. The factories of these companies were established to process green leaves coming from their own estates. It was only later in the early to mid-1960s, during the consolidation phase of smallholder tea cultivation, that they were also requested by the government to process green leaves from the surrounding smallholders. There is, however, no structural link between the outgrowers and the companies. With growing problems of inadequate processing capacity, the companies are increasingly forced to pay more "allegiance" to their own estates. Even though outgrowers' contribution of

Table 6: Tea green leaf and Sugarcane Prices, 1978-88

Year	Current Prices		Real Prices ^c		Index of Real Prices	
	Tea ^a	Sugarcane ^b	Tea	Sugarcane	Tea	Sugarcane
1978/79	150	96.2	884	567	180	159
1979/80	150	101.2	692	466	141	131
1980/81	150	106.2	547	487	112	137
1981/82	150	137.3	440	403	90	113
1982/83	200	170.0	438	372	89	104
1983/84	280	238.0	505	429	103	121
1984/85	410	323.7	532	420	109	118
1985/86	490	356.1	490	356	100	100
1986/87	760	462.9	585	356	119	100
1987/88	—	600.0	—	370	—	104

a. Cents per kilogram

b. Average prices per tonne of cane with 10.5 per cent RS.

c. Real prices expressed in constant 1985/86 terms using Tanzania's NCPI as a deflator.

Source: MDB Annual Review of Tea, 1986, and Annual Review of Sugar, 1987.

green leaves to total processed green leaves has remained at an average of 24.6 per cent for the Dindira Tea Estate Company (1979/80 to 1985/86) and for the Ambangulu Factory at 22 per cent (1976 to 1986),²³ it has become increasingly difficult to accept most of the green leaves from the outgrowers.

Indeed, the Dindira Tea Estates Company has had to suspend purchases of green leaves from outgrowers pending a major rehabilitation of its plants. Because of this, the outgrowers surrounding the company has had either to sell its leaves to the already over-burdened Ambangulu processing factory, or find an ingenious way to sell their leaves. This they may do through third parties at extremely low prices (parties that are located between them and the nearest TTA-owned processing factory—the Mponde factory) or leave the bushes unmanaged to grow into forests, only too visible to any passer-by.

Another reason leading to the uneasy relations between the outgrowers and companies in the study area is the outgrowers' increasing cost of producing green leaves. This is partly due to the recently increased producer prices and high labour costs. The cost of buying one tonne of green leaves from the outgrowers is TSh 6,800, whereas the production cost per tonne of green leaves of the Ambangulu core farm (estates) is TSh 1,380. Naturally, the company would give first priority to its own estate's green leaves.

Outgrower contribution to total processed sugarcane has also not been satisfactory. The average contribution target of 30 per cent for the KSC's two factories from 1977/78 to 1986/87 was 35 per cent for Msolwa factory and 69 per cent for the Ruembe factory. Contribution of outgrowers' cane to total cane crushed at MSE has been particularly bad. The average contribution for the years 1977/78 to 1986/87 was 14 per cent. Only twice in ten years had the company had an excess supply of sugarcane (1980/81 and 1983/84). There are many reasons for this poor performance, including poor support services (transportation, cutting services, etc.), problems of inadequate labour supply, inefficient extension services, and inadequate producer prices.

It can be concluded that the overall outgrowers objective—to earn a modest cash income—has not been adequately met. Unless viable structural relations are established between outgrowers and the companies, the process of withdrawal from the cultivation of sugarcane and tea into food crops which pay more, which is already taking place, will certainly increase.

Assessing the main areas of performance

Food crop production. Under standard outgrower schemes or contract farming systems, the scheme's crop competes with food crops for land and other resources. Where growers have little say over the land they till and inputs they use this can lead to serious food shortages as Williams has ably shown regarding to the Mumias Sugar Company.²⁴

In Tanzania, the absence of legally-binding contractual relations, continued existence of traditional land tenure and the relative abundance of land gives outgrowers more flexibility allocating cultivated land to different crops. A typical Tanzanian household producer of export crops would normally also own land for a variety of subsistence crops. Because of the general availability of land the scheme's crop encroaching on the land for subsistence crops is almost ruled out. Therefore, any food shortage would normally be linked to the vagaries of weather.

Food crops, like paddy rice and maize, compete quite well for land with either tea or sugarcane (see Table 3 for Rungwe area and Table 4 for Kilombero and Mtibwa areas). The occurrence of food shortages observed in the survey cannot, therefore, directly be linked to the growers being compelled to concentrate on the scheme's crop. When asked whether the food harvest was generally enough to carry the growers from one harvest to the next, 69 growers (70.4 per cent) out of a sample of 98 growers for Kilombero and Mtibwa areas said it was, while 18 (18.4 per cent) said it was not, and 11 (11.2 per cent) did not reply. For the Rungwe area, 14 growers (30.4 per cent) said they regularly face food shortages while 27 growers (58.7 per cent) said they did not. For the Ambangulu and Dindira areas of the Usabara Mountains 13 growers out of a sample of 53 growers (24 per cent) agreed that they face occasional shortages, while 40 growers (76 per cent) said they did not.

This data from the three research areas shows clearly that food shortage is not a widespread problem among the growers.

Input supply and extension services. As already pointed out, a regular application of fertilizer is key to increasing productivity, particularly for tea. In spite of the supply bottlenecks, tea growers have regularly received adequate fertilizers. Out of 46 respondents in Rungwe area 42 (91.3 per cent) said they frequently used fertilizers, 2 (4.3 per cent) did not, while 2 (4.3 per cent) did not respond. The situation among growers in the Ambangulu and Dindira area is similar. In this area, 49 out of the

sample of 53 outgrowers (90.6 per cent) said they regularly used fertilizers, whereas 2 (3.8 per cent) said they did not, and 3 (5.7 per cent) did not respond. For the cane outgrowers, on the other hand, fertilizer use is not prevalent. Out of 98 respondents 5 (5.1 per cent) said they used fertilizers while 92 (93.9 per cent) said they did not.

Other types of chemical inputs, however, are not in great use although some, if properly used, would increase yields and reduce the costs of production. Weed killers, important in reducing labour requirements, are never used by the growers near the privately-owned Ambangulu and Dindira estates, although they are extensively applied in the company's estates. A significant percentage of the sample in the Rungwe area used weed killers. Out of 46 respondents 26 (56.5 per cent) said they used weed killers while 12 (26.1 per cent) said they did not, and 8 or 17.4 per cent did not reply. This discrepancy among growers of the same crop may be explained by the fact that growers in Rungwe, being suppliers of green leaves to state-owned processing industries, might be more favoured in the supply of weed killers.

Among the growers of sugarcane around the KSC and MSE, only 21 respondents out of 98 (21.4 per cent) said they used weed killers, whereas 75 or (76.5 per cent) said they did not and 2 per cent of the respondents did not reply. Use of chemical inputs is thus very limited with the exception of fertilizers used by tea outgrowers.

Extension services—when efficiently co-ordinated and tailor-made to meet the demands of smallholder producers—can be an important factor in increasing production and productivity. In the study areas, the growers, particularly those growing tea, receive regular visits from extension workers.

In the Ambangulu and Dindira area, 48 of the 53 respondents (90.6 per cent) agreed that they do receive visits from the government extensions workers. Only 3 respondents or (5.6 per cent) of the sample said they had never received extension services since they joined the scheme, and 2 or (3.8 per cent) did not respond.

In contrast, among sugarcane growers, extension visits are not frequent. Out of a sample of 48 growers for the Mtibwa scheme, slightly more than 50 per cent said they received extension services and 22 respondents (75.8 per cent) said they did not. Almost no growers at the KSC receive government extension services. Only 2 respondents out of 50 (4 per cent) said they receive visits from government extension officers.

A better indication of the integration of the

"culture" of extension services is the willingness by the growers themselves to request these services. Out of a sample of 48 growers in the Rungwe study area, only 17 (36.2 per cent) said they normally seek extensionists' advice. In the Ambangulu and Dindira area, 24 growers out of a sample of 53 (47.2 per cent) indicated that they request extension services. These percentages are not very high but, nevertheless, they indicate that when extension services are available and efficient, the growers are willing to use them.

Amount and timeliness of payment. Growers generally receive extremely low real prices for their crops. This problem, particularly for tea growers, is made worse by late payments, partly due to frequent institutional changes and liquidity problems. The recently re-established Regional Co-operative Union is currently going through immense liquidity problems and will probably need more time to stabilize.

Availability of credits and their recovery. Since cultivation of both sugarcane and tea is labour intensive, without a regular supply of credit—either through cash or inputs—it is difficult for the growers to maintain even the modest levels of delivery of sugarcane and green leaves they have been able to get so far.

For the sugarcane outgrowers, the company provides land preparation (fallowing), harvesting and haulage services on interest-free credits deducted annually from cane sales. The tea growers, on the other hand, receive credits in the form of fertilizer inputs and transport services, both deducted annually from sales. These are highly institutionalized credits tied to specific services and they therefore exclude other urgent production services that would normally require additional credit.

Tea plucking is the most labour-intensive activity and yet tea growers receive no credit to pay for the outside labour. A few may obtain commercial loans whose lending conditions makes the credit out of reach for an ordinary smallholder. A good number of tea outgrowers do normally resort to employing outside (non-household) labour. Out of 53 respondents interviewed in the Ambangulu and Dindira areas, 35 (62 per cent) said that they employed outside labour, while for Rungwe area, 42 out of 48 (89.4 per cent) said they employ extra household labour.

Opportunity for farmer participation. Some of the most successful outgrower schemes, such as those under the Kenya Tea Development Authority (KTDA), owe their successes partly to the fairly independent character of the schemes. Under KTDA

growers own shares and tend to act as an interface between the Government and the KTDA.

The institutional set-up in Tanzania is such that, even with the re-introduction of Co-operative Unions (effective in 1984), it is almost impossible to establish growers associations that would have relative autonomy from the state-sanctioned Co-operative Unions and the companies. This arrangement would only be possible if a farming system approximating contract farming, with checks and balances for both the companies and the growers, is established. As it is, the Tanzania state is not yet ready to reduce its hold on the conditions of peasant household production and marketing.

Conclusion:

Evolving an institutional set-up conducive to outgrower and contract farming systems

There has been no single outgrower scheme in Tanzania that has been successful from the point of view of the growers, the companies or even the government.

Rapid institutional changes and an institutional set-up that aims to have a state presence at all levels of agricultural production are the main obstacles to evolving viable outgrower schemes or contract farming systems. Any major breakthroughs in improving smallholder production will require far-reaching changes in marketing, input distribution, provision of extension services and producer price determination. There have, of course, been major attempts to evolve viable institutional structures, particularly after 1982 (e.g., the re-introduction of co-operatives, local governments and the Economic Recovery Programme adopted in 1986). While these changes have, to some extent, freed agricultural production from excessive state intervention, they were not related to the objective of evolving viable outgrower schemes and have hardly affected this potentially effective farming system.

Four major institutional changes could go a long way in establishing viable outgrower schemes in Tanzania:

- restructure outgrower relations away from direct state control and build more links with the companies, be they state-owned or privately-owned, particularly in providing extension services and key chemical inputs
- encourage and support the privately-owned core farms and factories in expanding their installed processing capacities in order to capture more of the outgrowers' output. Smallholder outgrower contribution to total production of sugarcane and green leaves can be significantly increased if the responsibility of expanding smallholder outgrower production is not dominated by the state as it is currently, particularly for green leaves.
- transform the loosely-structured outgrower-company relations into more legally binding relations to protect the interests of the growers. This would demand fundamental changes in the current approach to co-operatives in Tanzania. The current dominance of Regional Co-operative Unions, vis-a-vis Primary Co-operative Unions is not conducive to successful outgrower-company relations.
- re-evaluate land tenure. The state should continue to be the overall owner of land but allow for a system of controlled "freehold" land tenure in which land could be sub-leased to the outgrower through the company, but revoked if outgrower-company agreements are not fulfilled. The revoked title deed should not be subject to sale by the company except through the state, and the outgrower who forfeits the title deed should be guaranteed another piece of land elsewhere. This proposal is similar to the land tenure changes suggested in the 1983 Agricultural Policy of Tanzania, with slight modifications introduced to take into account the nature of relations between the outgrowers and the companies.²⁵

The above proposed policy changes are not easy to implement, particularly in view of the many years of state-managed agricultural transformation. Fundamental changes in agricultural production can only be effected if the interests of the major actors are protected. A carefully worked out contract farming system could well be one way of realizing this objective.

Notes

- * Senior Lecturer at the Institute of Development Studies of the University of Dar es Salaam, Tanzania, specializing in problems of rural development and agriculture transformation in Developing Countries.
- ** Lecturer in development studies and working with the Institute of Development Studies of the University of Dar es Salaam, Tanzania.
- *** Agricultural economist and a Research Fellow in the Economic Research Bureau of the University of Dar es Salaam, Tanzania.

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Contract Farming and Smallholder Outgrower Schemes in Zambia*

Griffin K. Nyirongo
*Institute for African Studies
University of Zambia, Lusaka, Zambia*

Emmanuel W. C. Shula
*Rural Development Studies Bureau
University of Zambia, Lusaka, Zambia*

Abstract

Contract farming and outgrower schemes in Zambia were studied to understand their contributions and limitations for increasing agricultural growth and rural welfare. This case study focused on sugarcane and cotton.

The relationships between contracting parties, the nature of the contracts and the operation of the contractual arrangements are discussed, including the implications for replicating such arrangements for other crops. Given the incidence of institutional deficiencies in projects under other strategies, the two projects under study have performed well. The field work covered the Central, Eastern and Southern provinces of Zambia. The authors drew freely upon Ellman's 1986 report on the Kaleya Smallholder Sugarcane Scheme.

Basic Description

Policy context

The policy context can be discerned from the three levels representing state ideals and the policy execution environment. The fourth factor is that of various instruments used to support the realization of set objectives.

First, at the macro or national level, broad raw values of the state are provided. Zambia's agricultural policy objectives are to:

- diversify the economic base by striving to make agriculture a leading sector in generating national income
- promote a self-reliant and progressive rural society through farm and agro-industry-related employment opportunities with the hope of reversing or curtailing rural out-migration
- achieve self-sufficiency in food crops to sustain consumption of protein-rich and protective foods for all inhabitants as a measure of food security

Second, at the meso level, these ideals are shared out as obligations among the ministries and the

holding parastatal conglomerate. Since private capital investment has proved hard to attract into the agricultural sector, the realization of agricultural policy objectives is the primary work of the public sector. The State, through its ministries, undertakes programmes and projects to selectively promote certain crops, or agro-ecological zones for specific crops.

Further, the State has set policy guidelines for all the parastatal or associate companies that are formed or operating under the Zambian Industrial and Mining Corporation (ZIMCO). These guidelines, specific to the agricultural sector, can be divided into two sections. The first deals with guidelines on joint ventures:

- Shareholding portfolios are 51 and 49 per cent with ZIMCO having 51 per cent. ZIMCO's shares are to be made up of the valued existing unexhausted improvements on the farms inclusive of machinery, equipment and vehicles. If valued assets do not make up the 51 per cent, ZIMCO has to subscribe cash to meet the shortfall.
- In the event of existing management being inadequate, a management contract is to be

given to minority shareholders.

- Detailed discussions and feasibility studies are to be carried out to determine the extent of investment and share capital subscription.
- Feasibility studies on development and transformation of the farms are based not only on concepts of viability and profitability, but also recognize the government's policy of production of food and exportable crops.

The second section of the guidelines refers to ZIMCO's role in incorporating the peasants and other petty commodity producers into the national economy. ZIMCO has defined this role through the concept of "small-scale farmer partnership". The approach has involved:

- nuclei estates whose aim is both to bring development to rural areas and to act as training grounds and demonstration units for peasant and smallholder farmers
- smallholder schemes which facilitated transfer of technology and production on contract for ZIMCO's processing companies²

The meso level takes much of the brunt of pressure for shifts in policy and policy instruments, as well as challenges that are internal and external to the institutions concerned in effecting those shifts. For example, it is the ministries and the ZIMCO group of companies that are at the forefront of negotiations for joint ventures with private investors.

Third, at the micro or project level, the raw values of the State are further processed and task goals are targeted. Policies are adjusted according to instruments at hand, resources available and strategy appropriate for the expected end-result of the project. The two case studies under the Lint Company and Kaleya Smallholder Scheme are examples of the micro-level of policy.

The Lint Company (Lintco) was formed by a presidential ordinance in 1978 taking over from the combined operations of NAMBOARD and the then Ministry of Rural Development which had been promoting cotton production since 1975. Lintco, although with its own Board of Directors, is subject to operating rules of a parastatal company directly under the prerogative rules of a government ministry. Its objectives are to:

- satisfy lint requirements for local textiles and a surplus for export

- induce cotton growing as a remunerative productive activity for smallholder families³

The Kaleya Smallholder Scheme (KSC) was established in 1980 as a more viable option for foreign funding than further expansion of the Nakambala Sugar Estate. The KSC is an associate company with policy guidelines coming largely from the Industrial Development Corporation (INDECO) with the latter being answerable to ZIMCO. The company's objectives are to:

- supply at least 200,000 tonnes of sugarcane to the Zambian Sugar Company (ZSC) mill in Nakambala Sugar Estate to supplement estate production
- allow and encourage Zambians to participate in the sugar industry and to improve their living standards

The two companies differ in their organizational and management structure, and thus the factors against which to measure project objectives and operations. These differences will be made clear in the sections below.

Finally, the policy context has various combinations of instruments to support the achievement of policy objectives. Among these are providing for infrastructure, mainly through public investment; a pricing policy which the State claims has been conducive to balanced production of raw materials and food crops; a monitored price structure for agricultural products, inputs and consumer items; marketing institutions which have been reconstituted over a number of years to create a composite structure of parastatal, co-operatives and private units to increase efficiency and effectiveness; and a fixed rate of exchange which has had controversial effects on export promotion.

Additional elements are the provision for technical, extension, research and credit facilities mainly through public institutions and establishing—or encouraging—irrigation; schemes for multiple crop harvests; wooing outside investment through the Investment Act; discouraging absentee landlordism and land speculation through the Land Acquisition Act; a land tenure base of stateland, reserves, and trustland regulated by applied English landlaw and local statutes (such as the Natural Resources Conservation Act, Lands and Deeds Registry Act, Town and Country Planning Act, Land Survey Act and the

Land (conversion of titles) Act). Tariffs, import control and the allocation of foreign exchange have proved important instruments for stimulating import substitution projects.

The interplay of these policies and policy instruments provide sufficient conditions for the growth of smallholder outgrower schemes and contract farming based on one or a combination of the following forces:

- a competitive situation amongst marketing or processing enterprises whose sole purpose is either to protect or promote the sources of their raw materials
- a situation in which an enterprise is moved by profit margin either to curtail production costs arising (or likely to arise) from its direct involvement in production or to take advantage of low-cost smallholder labour
- a deliberate programme under which the State (alone or in partnership with private investors) undertakes to selectively promote certain crops, or target certain categories of the rural community or agro-ecological areas for specific crops to satisfy internal demand or promote a diversified export base. The two case studies in this paper are a result of this condition.

Legal framework

Sugar. The KSC is owned by four investors who have jointly subscribed shares of 25 per cent each: Zambia Sugar Company (ZSC), Development Bank of Zambia (DBZ), Barclays Bank of Zambia (BBZ) (Lusaka Trustees), and the Commonwealth Development Corporation (CDC). The company's operations are subject to five legal agreements. First is the Investor's Agreement between KSC and the Government of Zambia (GRZ), ZSC, DBZ, BBZ and the CDC. Second are the Loan Agreements amounting to K 40 million⁴ between KSC and CDC; between GRZ (on behalf of KSC) and Africa Development Bank (ADB); between KSC and DBZ; and between KSC and BBZ. The Sugarcane Purchase Agreement between KSC and ZSC is the third legal agreement. This commits ZSC to purchase all standard cane produced by KSC; establishes the price to be paid as 115 per cent of ZSC's average cane production cost for that year; and lays down regulations on cane quality, delivery schedules, payment for by-products and phytosanitary controls.

The fourth regulation is the CDC Managing Agency and Consultancy Agreement. This agree-

ment was mutually terminated by the two parties on 31 December 1986. There are, however, still some expatriate staff on secondment from CDC funded by the Overseas Development Agency (ODA). Fifth is the Cane Farmers Agreement, signed between the smallholders and the company. The agreement comprises regulations for farmers, their obligations and those of the company. The farmers' regulations agreement stipulates standards for cultivation, irrigation and re-planting of cane, the control of the dwelling area and other matters relating to the farmers' settlement. The company holds title to both cane and dwelling areas. The smallholders have annual leases with automatic renewal as long as:

- the farmer remains solvent
- KSC remains solvent
- the farmer proves him or herself to the satisfaction of the company to be a good and diligent farmer and has not contravened the terms of the agreement or regulations

If KSC wishes to terminate the tenancy agreement permanently, the company serves a notice of intention for one to three months. If the farmer wishes to terminate it, the Company is supposed to be given a month's notice before the plot is vacated. The termination of the agreement is automatic on the farmer's death if no successor was nominated by the farmer. However, the nominee's admission is a prerogative of the selection committee. Compensation—which should be settled within 90 days—is calculated on the basis of unexhausted improvements on cane and dwelling areas undertaken with prior knowledge of the company, standing cane, deductions accruing from damages to installed property and unpaid charges or loans.

Cotton: Lintco is owned by the government with the Minister of Finance holding the issued share capital. While the government has been the major source of finance, the company enters into legal concessions with various financial institutions for long and short-term loans. These sources for finance have included the Development Bank of Zambia for short-term loans and overdrafts for seasonal operations guaranteed by the government. Lintco was receiving subsidies from the government up to 1985.

The two categories of cotton growers—commercial cotton and basic seed growers—have different legal status in their relationship with Lintco.

The majority (98 per cent) are smallholder farmers growing commercial cotton. Farmers may grow cotton for this category upon expressing their intention to the extension agent. The agreement is basically concerned with the loan package and does not have any punitive clause in case of default or defraud. With no rigid conditions of eligibility, large-scale farmers are also considered under the system as smallholders if they are interested in growing cotton by setting aside a portion of their farm for the crop.

The second category involves individual and group contract farmers under Lintco's Seed Division. According to the Basic and Certified Cotton Seed Contract, the farmer is bound through payment of the registration fee to:

- buy the basic seed only from Lintco
- grow and grade the crop in accordance with the regulations
- abide by all instructions given by Lintco seed officers or government seed inspectors
- adhere to the Seed Act regulations regarding seed production
- give the official agents free access to the cotton field to take samples for quality
- destroy any area of cotton field in excess of 10 per cent of the allocated land area
- complete picking by mid-August and deliver the whole harvest to Lintco's ginnery or depot

For its part, the Company binds itself to:

- supply basic seed
- take care of registration and control according to the Seed Act regulations
- buy all seed cotton produced which meets the standards in force

Farmers are obliged to destroy crop residues by a certain date, failing which they are struck off as seed growers. Disputes that may arise from the contract are resolvable by mutual discussion or by arbitration under the Arbitration Act.⁶

Crop production and processing system

Sugar. The KSC is highly mechanized, with centrally-controlled irrigation systems and a strict management approach, combined with tight control of smallholder behaviour. The management maintains that this "high-impact" strategy is the best possible option given the need to bring land into production as rapidly as possible considering the output requirements expected of KSC; that the system is well proven on commercial estates and applied with success on smallholder cane projects in Swaziland and Kenya; and that it is uncertain whether an alternative production technology—possibly of lower cost and more labour intensive—would be feasible in KSC's circumstances.⁷

The production system involves clearing, leveling and ripping, and constructing roads and irrigation works by heavy machinery using local contractors. Seedbed preparation and collecting, loading and transporting cane to the factory are mechanized and carried out by the company. Irrigation, fertilizing, weeding and control of pests and diseases are tasks normally carried out by the farm families. Several other demands for family labour input are made by the management when need arises. These tasks are carried out under close supervision of extension officers assigned to supervise smallholders. The company reserves the right to carry out tasks on the cane area during the production cycle and charge the costs to the farmer's account.

Each farmer is allocated 4 hectares for growing cane and a further 0.5 hectares for dwelling and growing rainfed crops in a village cluster. Farmers can only grow recommended varieties of cane. No other crop is allowed to be cultivated in the cane area.

The Company keeps a labour force of more than 700 permanent and temporary employees on both the nucleus estate and smallholders' plots. The management cites technical reasons for not leaving tasks of harvesting (burning and handcutting) or transportation to smallholders, in order to uphold the required cane quality.

Cane is milled at the adjacent Nakambala Sugar Estate which has the capacity to mill 2.5 million tonnes of cane—a maximum production of some 200,000 tonnes of sugar per annum.

Cotton. Lintco recommends a land-intensive approach for optimal resource allocation. To this end the company provides a standard cotton pack consisting of seed, insecticide and sprayer. The packs can be obtained on credit or by purchase, the amount required determined by the size of the

cotton field.

Most of the farmers use a combination of draft power and hand tools and depend on both family and hired labour. The types of crops to grow and land-use patterns are left entirely to the farmers' discretion. Usufructural rights under which cotton is grown by the majority of farmers are embodied in the traditional land tenure system.

Producers of seed cotton are assigned limited land area to ensure good husbandry and spread the task to encompass many farmers. This limitation, however, does not apply to overall land use and cropping patterns. Seed production quantities are pre-determined by the company to avoid wastage as shelf-life for seed is short. Lintco employs seeds officers to supervise the whole production cycle. The yield per farmer is assessed and estimated as a precaution against adulteration and admixtures. The price for basic seed is higher than that of the commercial cotton seed. In the 1987/88 season, for example, basic seed fetched K 5.00 per kilogram, compared with K 3.00 per kilogram for commercial cotton seed.

Seed is only purchased in mid-August to ensure that commercial cotton is not added to the seed crop and that seed is ginned early enough to allow for delinting and testing by the end of September so that seed distribution can start in the second week of October.

Lintco gins commercial cotton for the local mills and markets at its plants in Lusaka and Eastern provinces. A plant in Mumbwa, financed by Lonrho, has a capacity of 16 million kilograms and gins solely for export. An additional capacity of 16 kilograms of seed cotton is being installed at Gwembe by a consortium of private investors under the Gwembe Development Company. Lintco is a minority partner in both the Gwembe and Mumbwa gineries.

Nature of firm, growers and contracting relationship

Lintco's operations are biased toward peasant cultivators as farm families or co-operators. The company has designed and implemented production and marketing strategies that have encouraged smallholders to enlist as cotton growers. The relationship between growers of commercial cotton and the company is made up of a loose system of mutual benefit, where the grower has an assured market and access to company services. Farmers are recruited by expressing their interest to extension officers and can opt out of growing cotton at will. Nevertheless, as long as they grow cotton,

farmers have to get their inputs from Lintco, follow cultural practices as recommended and sell only to the company.

In the absence of a legal contract to cover cases of default, the company seeks to recover loans from farmers through mutual arrangement with other marketing or lending institutions and through extension agents who trace the defaulting growers.

Lintco has been encouraging the formation of farmers groups. These groups, so far, are in the company's interest as they are within reach and participate in a delivery set-up for services it offers to farmers. The company has had plans to organize Village Business Communities (VBCs) as an approach for grouping smallholders through which it can:

- contract cotton growers to undertake input sales, marketing and transportation of produce to Lintco depots on agency basis
- provide extension services together with a provision to second a Lintco Depot buyer for 24 months to enable the VBC to gain experience to undertake operation on its own.
- extend loans since the socio-economic cohesiveness of the group would be enough for liability, replacing the property-based collaterals which was found to be inappropriately far-fetched for peasants

However, in its administrative structure and objectives, this approach has conflicted with the operations of a more encompassing primary co-operative society. It is, therefore, unlikely to be implemented in its entirety. Lintco's relationship with seed growers takes on a tighter twist with most provisions weighed against farmers, as described earlier. The contract is rigid and only punitive to the producer in the event of default or misdirection on regulations. The company justifies this position by claiming that seed production is a highly specialized technology upon which a particular future crop depends for variety and purity. Thus growers must adhere to specific production requirements which are imposed by the Act through the Seed Certification and Control Institute (SCCI).

Seed farmers are paid-up members of the Zambia Seed Producers Association (ZSPA). The ZSPA represents all its members at meetings to discuss the development and future of the cotton industry and engages in the negotiations and fixing of producer prices. Currently, the Association, the government

seed inspectors and Lintco are reviewing the contract to reduce the bias against producers and to allow them more say in the contract. However, organizing smallholders to this end has been slow. It has been alleged that most of the members are illiterate or semi-illiterate.⁸

The KSC's system of recruitment and induction has a number of stages. Applications from prospective farmers are invited through press advertisement and announcements by local authorities. The company then considers basic qualities required of the applicant. The applicant must be Zambian, middle-aged in good health and physical strength, have a reasonable-sized family for assisting him on the farm but with a limited number of dependants. The applicant must also have agricultural experience and interest, adequate arithmetical ability, be used to working in a disciplined environment, have drive, determination, initiative and be of good character and prepared to settle at Kaleya and work in a disciplined environment.

The selection process then proceed into four distinct phases, involving:

- preliminary screening by the management
- first selection interview, conducted by a Selection Committee consisting of the District Governor, four chiefs from within the province, District Land Use Officer, District Agricultural Officer, Personnel Officer of the ZSC and the KSC General Manager
- six months training programme
- second Selection Committee interview

A prospective farmer has to go through these stages and is considered an applicant until he is confirmed. A trainee farmer works in a gang of twenty-five as a general worker on induction for at least six months on Estate cane. He will work on aspects of production such as planting, weeding, fertilizing, irrigation and drainage, pest and disease control, cane cutting and trash clearing. The trainee farmer must report for work daily, perform satisfactorily, learn and get used to the demands of sugarcane production and the necessary self-discipline and imposed discipline.

In addition, trainees have a three-hour classroom discussion each week on particular topics of cane husbandry, farm management and budgeting. They are paid as general workers both for field and classroom work. A confidential report is prepared

for the Selection Committee on each trainee's performance. This report is used as a reference for the final selection.

Once confirmed, the farmer is to abide by the regulations:

- The farmer must cultivate only cane on the cane area, according to recommended husbandry, and sell all cane to KSC.
- No third party is allowed to cultivate any crop or permit any person other than his immediate family to live on the scheme.
- The farmer should not carry out any construction without prior knowledge of KSC.
- He must avoid any activity that can be of disastrous consequences or nuisance or annoyance to KSC or the neighbourhood.
- He must assist in such undertakings that are for the security of the scheme, such as fighting fires.
- He must allow company employees free access to both cane and dwelling areas to carry out supervisory, repair, maintenance or production tasks.
- The farmer must pay rental and other charges for inputs and services such as extension, replanting, harvesting and transportation.
- Neither cattle, sheep nor goats may be kept at the scheme.

Smallholders are formally on a one-year lease. They are allowed to draw monthly allowances from KSC until the first harvest. Farmers can, if they wish, sell their labour as casual workers for which the company pays them casual wages. The farmer builds his dwelling house according to the company's specifications.

KSC provides all the infrastructural support for irrigation water to the cane area and repair and maintenance work to the irrigation system. The company supplies seed cane, replants, harvests and delivers cane to the mill. Due dates for these tasks are given in a notice to farmers to make certain that they are present when company employees are working on their plots. KSC operates a current account between the farmer and the company for records on charges to the farmer and proceeds from the sales of cane.

There seem to be no penalty clauses with regard

to the company's responsibilities to the smallholders. The company, for instance, cannot be held responsible for any damages resulting from its routine maintenance of the irrigation system nor is it held liable for any loss resulting from incomplete harvest owing to such reasons as insufficient maturity of cane. Whereas the farmer is expected to pay his charges on a timely basis, the company exonerates itself from being obliged to pay the farmer on schedule.

The smallholders have an association which handles and presents all their problems to the company management. They are also represented on the Board of Directors. The Cane Farmers Agreement stipulates that KSC is committed to devising a system whereby, in due course, the farmer, together with other smallholders, "shall participate in the ownership" of the company and "not to remain solely as a licensee of Kaleya" and that it is the "intention of the parties hereto that the farmer shall become a member of a co-operative, or an association, or such other body as Kaleya considers is the appropriate means whereby the farmer may so participate". These provisions are yet to be implemented.

Distinctive Features

Social policy has been instrumental in implementing and promoting cotton and sugarcane production. However, at Kaleya production targets have been the main determinant of management structure, the production technology favoured, investment plans and support services to farmers. In comparison, Lintco, has demonstrated a strong social purpose. Both companies are subjected to pressures to meet national consumption needs, produce exports to earn foreign exchange and provide a means for other companies (private and government) to

realize their foreign exchange retention quotas.

Both camps of farmers are subject to monopoly powers of the two companies on the choice of technology, sources of inputs, crop varieties, marketing and returns. This has a substantial influence on the farmers' behaviour with or without contractual arrangements.

Lintco assumes an open and evolutionary approach thereby maintaining a socio-economic fabric of primary relationships and obligations enshrined in traditional mores and set-up. This approach provides an indeterminate internalization of technological packages, based on a secure tenure and a production system dependent on individuals' independent decisions. The KSC approach assembles individuals to form a socio-economic fabric based on secondary contacts characteristic of modern sector workplaces. This closed system is resulting in dependence on a monoculture and farmers' subjugation or organizational manipulation and insecurity.

The various institutions and agencies linked to the two companies constitute an important intervening variable due to their impact on performance criteria which, as far as possible, are reduced to a "joint purpose" objective. While the two companies are directly responsible for task and relationship behaviour with farmers, both the KSC and Lintco are linked to other institutions who determine (or have a major influence on) the output quality, prices and allocations by direction (export or internal) and volume. ZSC and the financial institutions have authoritative presence in KSC operations while Lintco is subject to demands made upon it by MAWD, the four local mills and chemical suppliers, such as Hoechst. These linkages assume national or associational interests and thus have a questionable effect on returns to farmers.

The proportion of import content in the opera-

Table 1: Seed Cotton Purchased by Lintco, 1978/79-85/86

Season	Growers (no.)	Area (ha.)	Production (kg.)
1978/79	16,200	21,440	8,063,989
1979/80	17,279	24,595	15,097,980
1980/81	19,805	30,935	23,824,867
1981/82	17,630	36,715	17,177,178
1982/83	22,926	33,324	13,171,562
1983/84	38,424	55,884	32,077,161
1984/85	38,421	54,758	43,907,146
1985/86	36,276	50,010	30,068,890

Source: Lintco Annual Reports for the years cited.

Table 2: Sugarcane Production at Kaleya, 1983-87

Year	Smallholders		Production (tonnes)	
	(no.)	Smallholder	Estate	Total
1983	—	—	30,028	30,028
1984	8	4,706	126,368	131,074
1985	8	3,155	219,139	213,294
1986	86	46,199	139,965	186,164
1987	147	72,219	157,706	229,725

Source: H.I.M. Sindele, Kaleya Smallholders Company Limited: Its Objectives and Operations. Paper presented to the National Workshop on Contract Farming and Smallholder Outgrower Schemes in Zambia, February 1988.

tions of the two companies make them vulnerable in a country faced with acute shortage of foreign exchange. Lintco, for example, has experienced late consignments of chemicals and debilitating pressure resulting in their changing chemical brands. In this situation either the farmer is at a disadvantage or the company bears more management and operational costs in extension needed to implement the changes.

Evaluation of Performance

Crop production

Lintco has been acclaimed as one of the success stories in the promotion of agricultural development in Zambia. On this account it was directed to promote coffee and soyabeans in addition to its cotton operations. The general upward trend in terms of number of growers, hectares planted and production levels indicates the strides made by the company in cotton production (Table 1).

At KSC, by 1987 sugar production had surpassed the annual target to supply 200,000 tonnes of sugar cane to the ZSC. This goal has been attained using only 84 per cent of its irrigable land (Table 2).

Unfavourable climatic conditions have been singled out as the major factor preventing Lintco from meeting its targeted production levels.

For example, in 1981/82 the late arrival of rains led to late planting; the crop was further subject to unfavourably heavy rain towards the close of the rainy season.⁹

Inadequate supply of inputs has also been cited as a constraining factor. In the 1983/84 season the company was forced to sell sub-standard planting seeds on account of high demand. The Lintco annual report for 1985/86 points to the inadequate supply of planting seeds.

In some cases the failure to secure the required

amounts of bulk chemicals from suppliers has compelled the firm to use alternative insecticides. Late delivery of inputs has also been cited as a stumbling block.

A number of constraints have been identified in the cane production system: delays by contractors in completing projects and costs exceeding the budget. The production system is highly sensitive to foreign exchange shortages which may lower yields regardless of smallholder efforts.

Welfare aspects

Outgrower schemes and food production. A critical concern in the promotion of contract farming and outgrower schemes is their possible impediment to food production. Most out-grower schemes have emphasized production of non-traditional cash crops. In the Zambian case of cotton, the "contract" does not specify the amount of land that should be devoted to cotton or other crops.

The tenure system does not pose any problems to the majority of growers, whether the issue additional land needed for expanding plots or the general occupation of crop and animal husbandry. The family size, types of implements used and access to extra-household labour are the three most important determinants of land-owning patterns and volume or diversity of crop output. The majority of smallholders consider cotton growing as a necessity in addition to subsistence food crop production. The company provides no assistance to the grower other than services for cotton production.

In terms of land use and crop patterns, maize accounts for the larger share of planted area and is also a major cash and food crop. This is partly due to price variations among crops. For example, the price of maize is currently 1,200 per cent higher than it was in 1979, while the corresponding rise in the price of cotton is 783 per cent. The wider access

to credit for maize, through the Cooperative Credit Scheme begun in 1986/87, also contributes to increased maize production.

In comparison, the KSC approach impedes food production. In the management's view, food crops allowed to be cultivated on the dwelling plots are not intended to satisfy subsistence food requirements. The company considers smallholders as cash crop farmers and thus provides no support services to their food crop plots. The farmers are expected to gain their livelihood from the cultivation of cane.¹⁰

Smallholders, however, hold different views. In addition to expecting an adequate cash income, the farmers attach high priority to producing their own food.¹¹ Furthermore, Ellman points out that mechanization of major parts of the production system and mono-cropping of sugarcane on the irrigated land leaves the smallholders' family labour under-utilized for much of the year.¹² This implies that food production could be boosted if impediments were removed.

Food production at KSC is further constrained by the poor soils on which the dwelling land is situated. It is estimated that, on average, the farmers require at least 1.5 hectares of rainfed land or 0.5 hectares of irrigated land to meet their household food requirements.

From the above we can conclude that contractual arrangements that do not link land use and crop choice are not likely to impede food production.

Indebtedness. The cotton outgrower scheme does not pose any serious problems of indebtedness. Unlike the KSC, the cotton scheme does not fundamentally alter the position of the farmer. The KSC scheme, however, moves farmers to designated smallholder plots. With a time lag between planting and first harvest, the company is therefore compelled to provide incomes to assist farmers—invariably an aspect of indebtedness.

In the cotton scheme, cotton is simply introduced as an additional crop. Lintco is under no obligation to provide for the growers' livelihood in the interim period.

Technological aspects

Extension. The efforts of Lintco have greatly improved the farming skills of cotton growers. The major contributing factor being the extension services provided by the company. Though the company does not have a large staff of extension workers, the arrangements whereby the Department of Agriculture seconded extension staff to Lintco has proved effective. In 1986 there were a total of 277

extension staff seconded to Lintco. They rank from Provincial Cotton Extension Officer to Cotton Demonstrators. To assist the extension officers are 1,080 contact farmers. Contact farmers are a kind of intermediary class with lower status than extension officers but conversant with details needed by the small farmers and available for consultation in the village where they reside. Unlike extension agents, contact farmers are not mobile nor are they remunerated.

As an incentive, the extension officers seconded to Lintco receive allowances and are provided with transport in addition to their departmental salaries. The incentive package offered to the Department of Agriculture staff seconded to Lintco seems to motivate them to work harder. The majority of the farmers feel that Lintco extensionists offer better services than government agents not seconded to Lintco. The mobility of Lintco extension staff augurs well for the extension services provided. The Kaleya project, on the other hand, relies on its own extension staff.

Inputs development. Lintco produces its own seed. Since 1985, the company introduced a zonal system of seed production. Under this system all growers in specific areas are recruited as seed growers. This helps to avoid contamination of the seed crop and improves the supervision of growers. In collaboration with the agricultural research institutions, the Seed Certification and Control Institute and Zambia Seed Company, the Seed Multiplication Division of Lintco spearheads seed development. KSC has its own nursery from which two different varieties of cane are raised for the nucleus estate and smallholder plots. There is need for more work on developing cane varieties resistant to smut infestations.

With respect to chemicals, both Lintco and KSC depend on imported inputs. This dependence may have negative impacts on cotton and cane production largely due to the country's lack of foreign exchange. Delays in obtaining supplies and importation of substandard chemicals have been experienced. In 1979/80, for example, Lintco was forced to purchase for the first time a different insecticide (pyrethroid) due to supplier inability to secure enough quantities of the regular chemical.

Implements. Another aspect of technological issues relates to the implements used in the farming operations—especially the ownership of the implements and the terms of acquisition. Since the only implement Lintco provides is a sprayer, acquisition of other implements used in the farming operations depends on the availability of credit from other

Table 3: National Cotton Output per Hectare, 1978/79-81/82

Season	Output (kg.)	Season	Output (kg.)
1978/79	376	1982/83	395
1979/80	613	1983/84	574
1980/81	770	1984/85	803
1981/82	468	1985/86	601

Source: Lintco Annual Reports for the years cited.

Table 4: Sugarcane Production on the Kaleya Scheme, 1983-87 (Tonnes per Hectare)

Year	Estate	Smallholder
1983	136.3	—
1984	151.7	147.5
1985	153.2	98.9
1986	—	—
1987	130.6	125.6

Source: Sindele, 1988.

sources and the farmers' own resources.

Provision of implements has been a concern among the cotton growers. Farmers would like Lintco to provide them with farming implements. Though not as a direct response to the farmers demands, Lintco and Lonrho formed in 1987 a tractor hire company which is currently confined to Mumbwa District. This is not surprising considering that Lintco and Lonrho have stakes in the Mumbwa ginnery. It is in their interest to raise the production of cotton in Mumbwa so as to service the 16,000,000-kilogram capacity ginnery.

Effectiveness of the technological package. Effectiveness of the extension services and technological aspects of the Lintco scheme can at best be judged on the basis of output per hectare. Taking into account weather conditions, one notices a general increase in the output per hectare (Table 3).

However, the effectiveness of the KSC technological package seems spurious for two reasons. First, the KSC supervisory function is suspect: If it is true that the farmers are under strict supervision, how then does one explain the different output per hectare, and the decline on the estate and smallholder plots? Output per hectare is higher on the estate (Table 4). The management attributes the fall in production per hectare experienced after 1984 to failure to fertilize and weed. Indeed, the smallholders admitted using hired labour whom they left

unsupervised to work their cane fields.

The second reason is that the highly mechanized production system may increase farmers' costs due to machinery breakdown as wear and tear start taking effect.¹³

Marketing aspects

The Lint Company of Zambia is the sole marketing agency for seed cotton. To facilitate its input supply and marketing functions, Lintco has set up depots in all cotton-producing areas. The depots are set up along the lines of Provincial Cooperative Unions which, with Namboard, are responsible for the bulk of agricultural marketing. Although the depots are widespread, farmers face problems in transporting their produce from the farming areas to the depots. Providing transport to the depots would therefore enhance cotton production.

With regard to cane marketing, the farmer is required to sell all cane to Kaleya. The company for its part agrees to endeavour to arrange the cane harvesting and delivery to the mill but accepts no liability if, for reasons beyond its control, it is unable to. Clearly this clause creates insecurity on the part of the farmer.

KSC markets cane produced at Kaleya. An agreement between KSC and ZSC commits ZSC to purchasing all standard cane produced by Kaleya. The agreement also establishes the price to be

paid—115 per cent of ZSC's average cost of cane production for the year in question—and lays down regulations on cane quality, delivery schedule, payment for by-products and phytosanitary controls. Ellman observes that the absence of any formal institutional procedure for negotiating on price payments and controls and for arbitration is an unsatisfactorily aspect of the agreement.

Another aspect of marketing relates to the payment mechanism. Prompt payment augurs well for any marketing arrangement. Farmers are generally pleased with the payment procedures. However, delays by the company may have an impact on the growers. The delays, which the company attributed to administrative errors, ranged from four to eight weeks. Due to these delays farmers obtained inputs for their other agricultural activities late, as well as having had problems supporting their families.

Smallholders at Kaleya are paid for their cane less the cost of inputs and services provided by KSC. The farmer is paid for the cane in two stages: first, a month after delivery of the cane to the factory, and again in July following the year of harvest. Adherence to this schedule depends on timely payments by ZSC. The costs incurred up to the time of harvest are deducted from the payments and cover: credit (cash) and inputs (fertilizer, tractors, water, etc.); rent; administration charges; extension charges; replant charges; and interest.

The payment clause under the cane farmers' agreement is highly weighed in favour of the company. For instance, a farmer is obliged to meet any payment due within thirty days with a 10 per cent interest imposed on overdue debts. When the payment is due from Kaleya to a farmer, Kaleya endeavours to make prompt payment with no mention of interest on delayed payments. Although there has been no incident of Kaleya failing to fulfil its obligation, the imbalance between regulations governing the farmers' and company's behaviour is striking. It is, therefore, not surprising that the farmers have reservations regarding the imbalance inherent in this clause.

Credit aspects

Access to credit gives the farmers the opportunity to increase their production levels. The provision of inputs on credit by both Lintco and KSC has gone a long way towards increasing cotton and cane production. However, Lintco credit is limited to chemicals and insecticides, sprayers, seeds and packing materials. Farmers are therefore compelled to look elsewhere for credit, particularly loans for obtaining farm implements.

The performance of agriculture credit institutions in the country has not been satisfactory due to the limited supply of loanable funds and the tendency among these institutions to demand collateral. In these circumstances farmers have no option but to continue using a low level of technology. Clearly, Lintco's adjustment of its credit package to include providing implements will benefit both the company and the farmers. On the other hand, the highly mechanized production system at Kaleya compels the KSC to provide services pertaining to implements.

Currently, Lintco faces problems in loan recovery owing to its scanty contract and its dependency on mutual arrangements with other marketing and lending institutions.

Benefits and risks

Lintco buys seeds from the farmers and the farmers receive inputs on credit from Lintco. The seed is processed into lint and fuzzy cotton seed which is sold to the textiles and oil processing companies, respectively. Surplus lint and fuzzy seed is exported. The producer price for cotton is fixed by the Ministry of Agriculture and Water Development as provided for under the National Agricultural Marketing Act.¹⁴ The prices for lint and fuzzy seed are fixed by Lintco upon negotiation with the user industries. Input prices are determined by the company. The Lintco Inputs Division adds a mark-up which they contend covers the costs of handling the inputs. Since Lintco does not charge interest on credit, a proportion of this mark-up may as well be some form of hidden interest.

To determine the apportionment of benefits accruing from the cotton development programme, one must consider the input, producer and sales price variations. This reveals that the price structure is highly biased against the farmer. While producer prices rose by 46 per cent between 1978 and 1986, prices for inputs, lint and fuzzy seed rose by between 67 and 335 per cent.

The erosion of grower benefits is further demonstrated by examining the incomes and expenditure in their cotton operations. In 1985 the average income of the growers was K 1,373 against an average expenditure on inputs of K 125. In contrast, the corresponding average income and expenditure in 1986 were K 1,418 and K 228 respectively, representing a decline in net income from K 1,248 in 1985 to K 1,190 in 1986.

The nature of the contract, however, requires the company to absorb a greater part of the risk involved. Farmers are not compelled to grow the

crop. Hence, situations arise where some farmers had not grown every season since they registered as cotton growers. This has a bearing on loan default. In the absence of any legal contract, Lintco can only persuade the farmers to grow cotton with a view to recovering outstanding loans. The company extends additional credit facilities hoping that the farmer would eventually meet his loan obligations. The leniency with which defaulters are treated may partially explain why the loan recovery rates have dropped from 86 per cent during the 1982/83 season to 73 per cent in 1985.

Selling through third parties is the most common form of loan defaulting. One reason is that the company deducts 100 per cent of the loan at the time of buying the crop regardless of the possible negative effects of such a measure. Compounding the matter further is the fact that loans for soyabeans and cotton are treated as one loan where farmers grow both crops with Lintco assistance. Thus, a loan due for one crop which performs poorly is deductible from the proceeds of the other crop. It is probably due to the high risk involved that Lintco has occasionally threatened to take defaulting farmers to court.

The cane growers incomes on average have steadily risen over time. However, closer examination of income distribution reveals that the average picture portrayed is not representative (Table 5). The lower income category has undergone both downward and upward surges in income. One plausible reason for the huge disparity between the high and low income groups is that new entrants to the scheme may tend to be less efficient than those that have been in the scheme longer.

In the absence of the cost structure, a letter written by eight "worried farmers" provides some insight on the farmers' views towards the income accruing from the scheme. In the letter to the Settlement Manager, the farmers protested against what

they considered very high rental, administrative and replant charges and questioned whether the project profited the farmers or not. The farmers' concern is captured by Ellman's observation that for the project to achieve long term viability in its present form, overhead and annual production costs should be reduced.¹⁵

Organizational aspects

The existence or lack of a growers organization is a tricky issue. Effectiveness of such a body, where it exists, depends on factors other than the management merely offering the opportunity for farmer participation. Like most small-scale farmers, the cotton grower has no forum. Although the farmers genuinely believe that Lintco is interested in dealing with small-scale farmers, the majority feel that establishing a grower's organization would be in their interest. The farmers' judgement is correct, especially regarding representation of their interests. For example, Lintco pays a bonus to its employees whenever it makes a profit. This benefit should be questioned since it is not extended to the farmer. The growers would want an association to provide a forum for sharing ideas, organizing credit unions and providing implements.

Some of the farmers perceived the "contact farmer extension approach as a type of growers' association—insofar as the farmer shares his cotton growing skills with others.

Unlike the cotton growers, cane farmers have an organization which handles and represents their problems to the company management. In addition, the smallholders cane producers are represented on the Board of Directors. The existence of a representative system alone does not indicate much about how beneficial it is to the smallholder. This is especially so if the management continues to stick to "Dos" and "Don'ts" of the contract without shifting position on those points of social and eco-

Table 5: Kaleyia Smallholder Net Income, 1984-87 (Kwacha)

Year	Low	Average income High	Average
1984	1,948	3,476	2,749
1985	1,495	7,116	3,265
1986	4,707	14,004	9,836
1987 ^a	1,540	16,276	10,497

a. Estimates

Source: Sindele, 1988.

conomic disadvantage to farmers. In this case farmers under KSC are not better off.

Although the terms of the KSC Contractual Agreement are weighted against the farmers, it is important to note that the company has not yet felt the social pressures that would arise with a larger number of smallholders. The number of smallholders stood at 8 in 1984 and 1985, increased to 86 in 1986 and 146 in 1987. For its full development phase, KSC is expected to have 291 farmers taking up two-thirds of the schemes' area.

Replicability

The replicability of contract farming and smallholder outgrower schemes can be considered in two stages with each one offering a substantively different environment. There is the phase of monopoly operations, and that of competitive operations. A set of similar determinants for replication would yield different results under the two phases.

Monopoly operations

This phase is characterized by firms or companies involved in contractual arrangement being free from competition, either due to a low level of commercialization of the agricultural sector or because companies are protected through state policies. Under this phase—such as with the Lintco Scheme—"scanty contracts" and a traditional land tenure base do not necessarily pose any hinderance to the parties involved achieving their basic objectives. Lintco owes its degree of success largely to this portfolio. The monopoly position enjoyed by the company assures sustained links with smallholders and cushions Lintco whenever actions are arbitrarily taken against the interest of farmers.

The welfare interests or just returns for their produce are not and cannot be guaranteed with this phase for two main reasons. First, the firms assume much of the risk involved in promoting crop specialization and countering imperfections in factor and product markets. Contractual arrangements are therefore merely compensating for insurance against poor products. The second reason is price structure, combined with direct or indirect taxes on agriculture which the state often uses to provide for redistribution policies.

Replication is possible as long as several conditions are met:

- The monopoly position in marketing and processing of the promoting agency must be guaranteed

- Inputs and extension services must be provided and timely payments made.
- Farmers' returns must be sufficient to deter them from switching to other crops
- Land-use and crop patterns for other crops should be left to the smallholder to determine.
- Research on seed, chemicals, pests and disease control should be developed and localized.

Competitive operations

As the sector gets more commercialized or the agro-industrial base expands (with well-formed forward and backward linkages and liberalized marketing and processing structures), an environment exists for competitive operations. Tight contracts are normally resorted to for guaranteeing the market share of suppliers. The potential for improved farmer welfare may be greater under competitive operations in that competing firms are compelled to offer better incentives to attract and retain farmers.

Apart from the package of inputs, extension services, research and development and sufficient returns to farmers, replication is best assured through the following additional factors:

- Contracts should be tight enough to control farmers' behaviour, uphold crop management standards and undercut opportunistic behaviour against quantity cheating, quality manipulation and sales through alternative channels.
- The firm should have land tenure rights to attain the required scale of production, control land-holding and enforce cropping and land use patterns.
- Credit should be provided to sustain farmers during the period between first planting and harvest and hardship days.

The Kaleya Scheme is designed on a model of competitive operations which compels the company to commit itself and the farmers to unnecessarily high costs of investment and overheads. The current environment would adequately support KSC shifting away from such severe and restrictive settler conditions and tight management regulation.

Conclusion

Contract farming and smallholder outgrower schemes are a relatively new phenomenon in Zambia. Nevertheless, they have been adopted as part of the strategy to attain given policy proclamations. The single factor that attracts smallholders to these farming arrangements are the services provided. The monopoly position enjoyed by promoting agencies vis-a-vis marketing and processing compels these agencies to extend services which include credit, implements and extension.

Overall success of these schemes can be measured against a number of intervening factors. These may include the impact of these arrangements on food production, the apportionment of benefits or risk sharing and production levels. The case studies presented here reveal that contractual arrangements that limit land use and crop choice may have negative repercussions on food production. The lack of growers' association, characteristic of small-scale farmers, subjects them to unilateral management decisions of the promoting agencies which may not be in the farmers' interest. Notwithstanding these issues, the potential of contract farming and smallholder outgrower schemes is tremendous.

The two case studies have demonstrated in many ways a higher level of achievement and effectiveness in dealing with smallholder farmers, technological diffusion and crop output compared to other projects under other strategies.

Acronyms

ADF	African Development Fund
BBZ	Barclays Bank of Zambia Limited
CDC	Commonwealth Development Corporation
DBZ	Development Bank of Zambia
GRZ	Government of the Republic of Zambia
INDECO	Industrial Development Corporation
KSC	Kaleya Smallholders Company Limited
Lintco	The Lint Company
MAWD	Ministry of Agriculture and Water Development
NAMBOARD	National Marketing Board
ODA	Overseas Development Administra-

	tion
ZNPF	Zambia National Provident Fund
ZSC	Zambia Sugar Company
ZIMCO	Zambia Industrial and Mining Corporation

Notes

- * The authors acknowledge the contributions to the completion of this project by people and institutions too numerous to mention. We are greatly indebted to IDRC for financial support and to the University of Zambia for allowing us to participate in the project. We are also grateful for the assistance provided by Lintco, Kaleya Smallholder Company and Dr. Anthony Ellman, a CDC consultant who undertook a study of the KSC which we used extensively.
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Contract Farming: Sugar, Tea and Cotton in Zimbabwe

J.C. Jackson and A.P. Cheater

University of Zimbabwe
Harare, Zimbabwe

This paper discusses contract farming in Zimbabwe, presenting case studies of sugar, tea and cotton production. The term "contract farming" is used according to the following definition:

- i) a future or forward market in which a buyer or processor commits in advance to purchase a crop acreage or volume;
- ii) the linkage of product and factor markets insofar as purchase rests on specific grower practices or production routines and input and/or service provision by buyer-processors; and
- iii) the differential allocation of production and marketing risk embodied in the contract itself.¹

As elsewhere in Africa, the precise terms, conditions, and organization of contract farming in Zimbabwe vary considerably. Within Zimbabwe, where contract farming dates back to the mid-1950s, the institutional nexus of pricing and marketing, as well as the terms of contract marketing, also varies among crops.

The Zimbabwean state controls—at least in theory—fifteen different agricultural commodities through six separate marketing boards (the Grain, Cotton, Dairy, Tobacco, and Coffee Marketing Boards, and the Cold Storage Commission). For each of these commodities (except tobacco, which is auctioned) prices are negotiated between the Ministry of Lands, Agriculture and Rural Resettlement (to which these parastatals report) and producer organizations. In contrast, the pricing and marketing of all other agricultural products within the private sector is much more varied.

This paper examines three examples of contract farming: cotton and tea produced by outgrowers linked to nucleusestates owned and managed by the state, and sugarcane grown by large and small planters contracted to deliver their total output to the country's two privately-owned mills. These studies represent state and private contracting, irri-

gated and dryland production and marketing channels stretching from state marketing boards to private companies. These are only a few of the many examples of contract farming in Zimbabwe, which include: Burley tobacco growers in the north-east producing for a local affiliate of an international corporation; horticulturalists in the eastern highlands growing vegetables for a local subsidiary of a different multinational; small commercial farmers growing sugar-beans for a large Zimbabwean food processor; peasants and a few large commercial farmers cultivating dryland castor beans for the Zimbabwean licensee of another transnational; and the future outgrowers of a palm-oil project planned in the south-eastern lowveld.

Doubtless there are other, more "private" forms of contracting, such as those linking horticulturalists and rice growers to supermarket chains, about which even less is known.

The institutional diversity under which contract farming occurs in Zimbabwe is, in large part, a colonial heritage. There are notable gaps in production and income levels between peasants, small commercial farmers, and the really large producers, both corporate and individual. Since independence, the Zimbabwean government has tried to reduce this dualism between peasant and commercial agriculture. In some cases, however, such as for sugarcane, milk, coffee and tea, the policy of resettlement and contracted peasant production has reproduced *de novo* the very dualism which was to be eliminated in other crops, by creating a category of smallholders that did not exist in these commodities before independence. Political pressures to redistribute the means of agricultural production have led to some contradiction between different policies. Differences in scale of production are also related to different marketing and contracting options. A contracting package for small peasant farmers may have to include input credits (for fertilizer and transport) as well as seed from the contracting company. For a commercial producer, however, a marketing contract at an agreed pre-planting price may suffice to produce the output required.

In the colonial era, pricing policy for state-controlled crops was based on capitalist relations and costs of large-scale production. It is thus important to question the assumed viability of small-holder production which is encouraged primarily for political reasons. Where peasants cost neither their own nor their families' labour, such prices may initially look very attractive. However, when the small producers of cash crops under contract are required to use "high-tech" production procedures (e.g., aerial spraying of cotton, haulage of tea or sugarcane) which are controlled and costed by nucleus estates (whether state or privately-owned), their very scale of operation may be structurally unviable. In Zimbabwe, the question of structural viability needs to be examined separately for each contracted crop, with its own specific nexus of production scale, pricing and marketing procedures.

Structural viability affects contractors' strategies of participation in the contracting system concerned. Smallholders under contract who are, by definition, unviable, adopt survival strategies that straddle and manipulate different options (legal and illegal) within the contract framework. These "straddling strategies" inevitably conflict with the rules of contracting which are understood—though not always explicitly spelt out—by planners, developers and contract managers. There is a gap between plans and rules, on the one hand, and contracting practices on the other. Careful investigation reveals that in practice, planner-managers have to adopt a more realistic, *laissez faire*-type of pragmatism in applying the rules if these are to fulfil their original intent at all. Such pragmatism, however, also has its own tensions, as the following three case studies reveal.

The Case of Sugar

Structure of the sugar industry in Zimbabwe

Zimbabwe is among the top twelve sugar exporters in the world. Sugarcane is today produced under a modern plantation system, although in the past it has been both privatized and nationalized before passing into foreign control. The plantation system includes both large and small planters. Slightly less than half a million tonnes of raw and refined sugar, over half of which is exported, is produced from a little under 35,000 hectares of land owned and/or controlled by three estates. Triangle and Hippo Valley estates, both ultimately foreign-owned but locally-controlled, grow 70 per cent of the total hectareage and process all of the cane in

their two mills. Their mills have a combined crushing capacity of 20,000 tonnes per day, a "white-end" capacity of 60,000 tonnes per year, and an investment value of over Z\$60 million.² They also own the third estate, Mkwazine, and the non-profit-making, monopsonist Zimbabwe Sugar Sales, responsible for both domestic and international marketing.

Although planters within the estates benefit from the estates' monopoly in many ways, they are also organized into the Zimbabwe Cane Producers' Association (ZCPA), which defends their interests as independent growers against those of the mills as processors. Like the estates, millers and refiners, the ZCPA has representation on the Zimbabwe Sugar Association, formed in 1963 when Zimbabwe became self-sufficient in sugar production. This private association liaises with government on all matters concerning the sugar industry, and funds its own experimental research station at Chiredzi.

The government's role in sugar production is limited to licensing growers, millers and refiners; fixing domestic prices for refined and unrefined sugar; and regulating conditions of land and water use and employment. The Sugar Production Control Act (No. 23 of 1964) makes it illegal to cultivate hybridized sugarcane varieties for milling without a grower's licence, issued by government after consultation with the Zimbabwe Sugar Association.

Production constraints

Irrigated cane production is highly capital-intensive in Zimbabwe's dry south-eastern lowveld. As costs have escalated, indefinite ratooning, at 12-month intervals, has replaced the six-ratoon-regimen of the past. The harvesting season is also extended to its maximum, up to the record of 287 days, between April and November. However, cane yields fall off in the second half of the cutting season. In addition, the sucrose content (estimated recoverable crystal percent or ERC) is so low in cane harvested at the beginning and the end of the cutting season that this cane is not economically viable to produce unless it can be offset against much higher, mid-harvest ERC values.

Some 95 per cent of the total hectareage is planted to a relatively low-sucrose and smut-susceptible variety (NC0376) which, however, has the best commercial performance under Zimbabwean conditions. Current breeding research may yield a better variety in the future. Meanwhile, the disadvantages of NC0376 are partially offset by average annual cane yields ranging from 90-180 tonnes per

hectare and an annual sucrose recovery of some 13-14 tonnes per hectare, in part due to extremely efficient milling. Production and marketing efficiencies alone permit Zimbabwe's high-cost sugar to compete internationally with the low-cost, rain-fed producers. The international market is highly volatile, with high-fructose corn syrups replacing sucrose,⁵ and absorbs over half of Zimbabwe's total sugar production.

Organization of cane production

On the three estates, irrigation, planning (of both cropping and cutting), providing power and water, monitoring the use of these resources, and transporting the cane, are the responsibility of the central agricultural administrations.

Each of the three estates is sub-divided into sections of 300 to 800 hectares. Each section (with an average of 35-40 "fields") is a semi-autonomous production and accounting unit, with its own workers' village. However, the sections do not fund the costs of their own capital (or welfare) development. The housing, irrigation infrastructure and haulage are paid for as well as planned by the central estate. In contrast, planters fund their own welfare and all overhead costs incurred on their behalf by the estates (including, for small planters, extension advice).

The smallest production unit is a "field", delineated by the central estate. Estate fields range in size from 3 to 30 hectares and average 13 hectares. Fields are smaller on the 50 to 150 hectare farms of large planters, averaging 4 hectares. Yields from different fields in the same section vary enormously.

The differences in sugar content at different stages of the harvesting cycle are averaged out by cutting fields from each section and each large planter each week. Production is oriented completely to economies of scale and the meticulous scheduling of all production sequences. The precise dates for cutting each field are planned in advance each year, and are varied only by central estate decisions in conjunction with the mill. Estate section managers organize, but do not decide, irrigation, cutting and transportation schedules. Large planters accept weekly quotas issued to them by the mill and organize their own cutting accordingly.

The plantation system uses labour sparingly, even though cutting is a manual operation. Cutting bonuses vary, starting at a daily summer quota level of four tonnes of cane, but in winter (June-August) cutters regularly cut up to 9 tonnes daily. Some of the permanently-employed cutters sub-contract "helpers", who may be kin or foreign refugees. As

minimum wages have been raised since independence, the estates have improved agricultural labour efficiencies and 3,000 permanent jobs have been lost from the estate system.

Planters within the estate system

A little under 20 per cent of the total cane land within the estates' boundaries is owned by planters, whose title deeds contract the owner of the land to produce cane. However, many planters also operate poultry, aquaculture, and vegetable enterprises from their homes, especially the small ones whose 0.5 hectare residential plots are spatially separated from their caneholdings. The three estates in 1987 incorporated 55 large planters (growing 50 to 150 hectares of cane each) and 141 much smaller planters, whose holdings average 10 hectares (from 8.8 to 11.3 ha.).⁴ By the end of 1988, another 50 small planters will have been settled, totalling 191 planters working approximately 5 per cent of the cane-land. These 10-hectare units are actually sub-divisions of larger, 30-hectare fields in the estate irrigation network.⁵ They are being purchased freehold, over twenty years, at a cost of Z\$2,000 per hectare plus interest. This figure does not quite cover the estate's costs of bringing the land into cane production.

All planters are contracted to deliver their total output to their "parent" mill, the large planters having annual quotas divided into weekly units. One mill relies much more heavily than the other on planter cane and is consequently stricter about the precise scheduling of planter deliveries. A mill-gate price is applied only to the large planters. The transportation of estate sections' cane is a central charge, and the two mills share the costs equally of railing in all the cane (from sections, large and small planters alike) from the third estate, which goes equally to the two mills. This mill-gate price means that only the large planters must bear the costs of transporting their own cane to the mill. The system scheduling the very accurately forecasted yields at the mill means that only a miniscule fraction of the cane is ever rolled over to the start of a new crushing season.

The crushing fee for planters is 35 per cent of sucrose value, based on the average sugar price realized during the season. Payment is made in part on delivery, with the remainder spread out over roughly 18 months, or as long as it takes to sell the sugar. All cane from each planter, large or small, must—like the sections' cane—be ERC-tested as well as weighed on delivery to establish the precise quantity of sucrose. There is some dissatisfaction—

especially among the large planters—with the crushing fee, although all planters also receive their proportionate share of the crushing by-products (especially filter mud used to build up poor soils and stillage waste from the distilleries, used as fertilizer) and the monetary value of "their" molasses and bagasse.

The small planters face particular structural difficulties, both specific and general. Essentially, the cane smallholders' structural problems arise from the fact that they are expected to approach yields which depend on economies of scale which are, by definition, not available to planters of their size. They were settled in fulfilment of the colonial government's stipulation that 40 per cent of their estate area must be privately settled. Mkwasine is 50 and 75 kilometres from the two mills which split the cost of transporting its cane. However, this estate's producers still face higher transport costs for inputs. The new Zimbabwean Government insisted on settling African smallholders, to spread the perceived financial benefits of cane production more widely, instead of the 80-hectare holdings originally envisaged. Many of these settlers, selected by government, had no previous experience of cane production. The cane smallholdings, as subdivisions of the field units with which the estate sections normally work, very soon ran into specific problems.

Each individual, 10-hectare, sub-field holding is cut (as part of the field itself) all at once. Half of them are, therefore, by definition structurally unviable, because they are cut during months when the sucrose content is below break-even level unless averaged out against peak-season levels. This problem was not foreseen in the planning of the smallholder scheme. A formula has now been accepted, with some reluctance, by the small planters to equalize the different ERC yields and remove the specific structural unviability of those sub-fields cut early or late in the season. This formula actually allows for exceptional performances (above or below the long-term stable average for a particular month) to be reflected in the sucrose "earnings". It is complicated to administer and is resented, particularly by those who give, rather than receive, the benefit.

From its 1980 peak, the international sugar price fell far below that on which the smallholders' general viability had been predicated. Simultaneously they failed to reach the average yield of 120 tonnes per hectare required to break even, thus leading to poor relations between the estate and its settlers, in whom it had invested considerable money.

During this period, the small planters depended on their sideline activities to guarantee their household subsistence and repayment of their settlement allowances. In 1985, these settlers formed themselves into an input cooperative (not a producer cooperative) to obtain access to marginally cheaper—by 0.5 per cent per year—loan finance from the Agricultural Finance Corporation. As they overcame their financial difficulties, the relationship between planters and estate management improved.

The entire system of growing and milling cane is based on large scale-efficiencies crucial to Zimbabwe's high-cost system of production. This system depends not only on irrigation but also on extending the crushing season to its maximum limits, despite unviable sucrose levels for half of this total period. Even the largest and the best individual planters find it difficult to achieve a 10 per cent net profit (on direct costs of Z\$400, 000 to grow 150 hectares of cane) especially if they work marginal soils. Many large planters own other agricultural enterprises in addition to their cane farms, having diversified to spread the financial risks of producing for an international market. The small planters, whose cane holdings and residential sidelines are their only farming investments, are therefore more vulnerable than either the estates or the large planters. In 1987 small planters needed Z\$800 per month to cover their direct input costs alone. Should a fourth, state-owned, sugarcane estate and mill be established as planned, even smaller-scale contracted peasants on such an agro-industrial estate would compare themselves unfavourably with estate employees, and rightly so. Today's minimum agro-industrial wage of over Z\$165 per month, plus the benefits of estate employment (free housing, domestic power or fuel, water, transport, health care and primary schooling) mean that unskilled workers on the two processing estates may be slightly better off than the small, 10-hectare, sub-field planters on the third estate. The position of even smaller cane growers would be substantially worse than that of estate workers.

The Case of Tea

Tea production in Zimbabwe is dominated by large-scale private and state-run plantations. A number of both planned and spontaneous small outgrowers are associated with these estates. Establishing tea is an expensive and labour-intensive development and the returns only begin to mature after several years. A plan for narrow tea-based rural incomes will in the initial years create unbear-

able costs in terms of lack of cash and related insecurity. Tea development for smallholders has to be seen within the context of a wider and necessarily diversified household income strategy. This is especially so in the context of the tea development that is taking place within the Communal Lands. As regards the future structure of the tea industry, there is considerable interest in further promoting smallholders.

As an agricultural commodity, tea is completely dependent upon its immediate post-harvest processing in specialized factories. In contrast to integrated estates with plantations and factories, outgrowers are completely dependent upon the *de facto* monopoly of their local tea-processing factories. There are no alternative green leaf markets nor small-scale rural processing systems for tea. Estates which control the upstream agro-processing become the sole buyers of an often directly-promoted outgrower component of green leaf production. As such, they represent a clear example of the core-satellite situation in which, in Zimbabwe, the outgrowers have neither a co-operative nor shareholding interest in the factory.

Current structure of the tea industry

Zimbabwe's share of the world tea trade is microscopic. The gross national production of manufactured teas would only satisfy two to three days' consumption on the world market. Within Zimbabwe, the production share controlled by the outgrowers is small and likely to remain so in the near future.

Our case study is drawn from the Pungwe Valley (or Katiyo) Estates, a state farm run by the Agricultural and Rural Development Authority (ARDA). The factory, which processes the state plantation's and the outgrowers' green leaf, annually produces 800 to 1,000 tonnes of processed tea. This represents 6 per cent of the national estimated production of 14,000 tonnes. The outgrowers' share of this output in the Pungwe Valley region is approximately 10 to 14 per cent (100 to 140 tonnes)—a small proportion of the national production. While there are outgrowers associated with the other locus of the tea industry in Chipinge, it is safe to say that outgrowers are an insignificant part of Zimbabwe's tea industry as it is currently structured. In terms of numbers of producers, the Katiyo outgrowers are equivalent to 0.1 per cent of the Kenya Tea Development Authority (KTDA) scheme.

Evolution of outgrowers at Katiyo

Pungwe Valley Estates emerged from one of the

activities of the Tribal Trust Land Development Corporation (TILCOR) which was established in the mid-1960s. (TILCOR operations came under ARDA's control after independence). These estates are made up of both the plantation and the factory at Katiyo and the plantation at Rumbizi. The latter is a separate section currently producing about one-third of the green leaf.

Failure to establish a smallholder tenantry

TILCOR's attempt to establish a tea outgrowing tenantry failed, and the established tea has subsequently reverted to the status of plantation tea under estate management. The reasons for this failure are not clear but were likely a combination of a highly-restrictive tenancy contract, probably modelled on other TILCOR contracts; the collapse of security in the early 1970s as that part of the country moved into full-scale war;⁶ and long delays involved in recouping the costs of establishing the tea and viable full-time tea-growing tenants as planned. A failure to appreciate the short- to medium-term costs (labour, foregone incomes, and negative cash flows) that the tea enterprise imposed on the tenants, may have generated short-run structural unviability.

The war in the 1970s had a profound impact on the local economy. Only 9 of the 85 outgrowers interviewed had entered tea production in the 1970s. Half of the currently-registered producers delivering tea to the factory have entered tea production since 1980. All this post-war and post-independence development has taken place on the Communal Lands adjacent to Pungwe Valley estates.

Tea outgrowing on Communal Lands

At Katiyo, 10 to 14 per cent of the factory's 1987 output was based on the production of 144 registered producers who were cultivating about 140 hectares of rainfed tea of mixed age.⁷ In addition to the 144 registered producers (those currently delivering green leaf to the factory), the outgrowers section of ARDA had registered the development of 137 new tea nurseries by 1985/86. These were administered by ARDA and financed by the Agricultural Finance Corporation (AFC). Credit for another 200 nurseries (capable of establishing another 200 hectares of tea) had been issued in 1986/87. There has thus been a significant spontaneous development of smallholder tea plantings on the Communal Lands adjacent to Katiyo Estates. Given the failure to re-establish the tenantry, this

pattern of development suggests that it may have been the tenancy contract, rather than the production of tea as a commodity that was unacceptable. There is now considerable interest in tea production on land more securely under the growers' control, and within the strategy for wider rural incomes.

Tea contracts

The "contract" for these more autonomous outgrowers of the 1980s, while not written and signed, is nonetheless cemented in the conditions of sale of green leaf to the Katiyo factory. It is based on what is called the "Chipinge formula" which appears broadly to replicate the KTDA system. The growers are given a fixed first payment based on the weight of green leaf collected and a second variable payment based on the sale price of the manufactured tea as it is auctioned on the world markets. A transport charge and an administrative and extension services levy is charged, estimated to be as high as 30 per cent of the value of green leaf delivered.

Transporting green leaf is a costly activity for scattered outgrowers, particularly given the seasonal pattern of leaf deliveries. Small amounts of the crop (7 per cent of total harvest) are delivered initially in August-September; between December and March monthly deliveries amount to 14 to 16 per cent of the harvest. The deliveries then tail off over the period of May to July. For five months of the year the transport system is required to deliver a meagre 14 to 20 per cent of the annual crop, compared to 80 to 86 per cent of the crop in the five months from December to April. This pattern of crop distribution is also demanding on the factory and labour requirements.

From the point of view of the growers, established tea is still attractive as compared with many other annual crops because farmers receive a variable but *monthly* income for eight to ten months of the year.

The recent dynamic and rapidly-developing tea outgrower component of the Pungwe Valley Estates has emerged out of the rejection of the initial attempts to establish an outgrowing tenantry under very close and paternalistic control. This has subsequently evolved into a relationship whereby the peasantry is freely electing to put *some* of its land under tea in the context of the communal tenure system adjacent to the estates. This development represents an important diversification of the economic activities of these participants rather than a narrow mono-cropping as under the tenantry model.

Moreover, outgrowers are combining this ex-

pansion of tea with a wide range of agricultural production (including maize, yams, rice, groundnuts, beans, millet, sugarcane, cassava, bananas, guavas, pineapples, coffee, green leafy vegetables, tomatoes and onions) as well as other non-farm sources of income. For example, a quarter of the currently-registered outgrowers claimed that their first primary source of income came "off the farm holding" (as labourers, employees, and self-employed persons in the local rural economy). Half of the households claimed that their second main source of income was "off the farm holding". The 85 outgrowing households that were interviewed claimed to have in aggregate 40 non-resident members employed elsewhere who regularly contributed economically to the rural household. Off-farm opportunities in formal wage employment are structurally restricted, and only a small proportion of rural households are economically diversified off-farm.⁸ However, where household members with off-farm employment are present, they have a profound impact on per capita incomes and underpin the economic security of rural households.

The "rules" of participation on outgrower schemes tend to impinge on the peasant strategy of diversifying incomes, as in the case of the tea outgrowers described above. In extreme situations the development plans will fail. From the peasants' point of view, the TILCOR development was a model of land expropriation (in what was a frontier zone within the Tribal Trust Land, and we surmise here that the tenancy agreement was totally insecure and had far too narrow an economic base.

The Case of Cotton

The Zimbabwean cotton industry represents one of the most remarkable recent developments in Africa. In 20 years the value of cotton earnings has grown from less than Z\$1 million⁹ to Z\$160 million. The number of registered cotton growers had risen to over 150,000 by 1986—120,000 more growers than in 1980, a five-fold increase. The vast majority of this growth has come from Zimbabwe's Communal Lands where the aggregate impact of research, development, extension, and training doubled the national average yield from the peasant sub-sector within a 4-year period (now at approximately 920 kgs. per ha. under rainfed conditions). This development in production has been accompanied by the development of a marketing network of depots and transit depots to serve the rapidly expanding, but more remote, peasant sector.

While cotton has a long history in Africa, the

development of the Zimbabwean cotton industry since the mid-1960s carries its own historic and institutionally-specific features. All cotton producers in the country fall under a nationally co-ordinated system of cotton marketing, controlled by the parastatal Cotton Marketing Board (CMB). The CMB regulates the sale of all seed to all registered growers; the intake of all seed-cotton from farmers at state-set prices; processing through ginning the seed-cotton into lint and cottonseed; and marketing of these products locally and on export markets. Only one of the nine gins in the country is operated by a private company as an agent of the CMB.

Irrigated cotton outgrowers and the cotton industry

In the 1985/86 season the CMB took in 250,000 tonnes of seed-cotton: 110,000 tonnes came from the Communal Lands, 105,000 tonnes from the commercial farming sector, 22,000 tonnes from the ARDA estates (i.e., estates and outgrowers) and 12,000 tonnes from the small commercial growers.

The 230 outgrowers associated with the two state-run irrigation schemes that were studied (Chisumbanje and Middle Sabi) are a tiny fraction of all cotton producers. They are, however, unique in their position as tenants on state land and in terms of their scale of operations—6 to 10-hectare irrigated holdings. The modal land holding under rainfed conditions in the Communal Lands is around 1.69 hectares.¹⁰ The cotton outgrowers studied represent an even smaller fraction of Zimbabwe's cotton industry than the tea outgrowers, partly because the Zimbabwean cotton industry has developed so rapidly, but also because the proportion of the national crop produced under irrigation is relatively small. Moreover, the agro-ecological potential for rainfed cotton is vast compared to tea.

Cotton outgrower schemes

Access to means of production (a package of irrigated land, credit and other services)—rather than access to a critical post-harvest processing facility or an assured market through the CMB—is crucial to the contract between cotton outgrowers and the ARDA estates. Until 1985, outgrower cotton was marketed through ARDA. In the absence of local AFC offices, ARDA also administered credit on behalf of the AFC. The core estates recouped credit, interest charges, and other costs of production incurred on behalf of the growers. However, with the post-independence administrative expansion of CMB activities, outgrowers now deal directly with the CMB when marketing their crop.

The cotton producers studied parallel the diversified incomes strategy observed among the tea outgrowers. However, within the context of the tenancy agreements there is much more subterfuge involved. The strategic behaviour of the cotton tenants, in most cases, provides legal grounds for their eviction. Half of the fifty tenants were evicted from the Middle Sabi scheme in 1985.

Participation in these two schemes involves a formally-signed contract. The agreement broadly covers the tenancy on state land and adherence to the rotation (winter wheat and summer cotton, both irrigated), rights to and obligations to pay for housing, water, electrical pumping and extension and administrative services. Tenancy status can be withdrawn for practices which diverge from the formal rules. It also includes an explicit restriction on non-farm activities and a full-time farming presence on the scheme. This last point is where many farmers' practices diverge from the formal rules of participation. From the point of view of the outgrowers, this seems to be necessary, rational, and indeed essential.

At Chisumbanje most of the outgrowers are local. After fifteen years, a large majority of the tenants continue to have land and homesteads in the immediately adjacent Communal Land (the majority within 50 kilometres). This very marginal land, well outside the limits of "safe" dryland cropping, nonetheless supports a high-risk arable agriculture (including cotton) and livestock. Thus, subject to the rains, the tenant outgrowers also undertake both dryland farming and livestock husbandry.

A striking feature of these schemes is the comparatively high degree of polygamous households with wives and homesteads on and off the schemes. Polygamy explains why the yields of one of the long-standing growers had suddenly fallen from being one of the best on the scheme. The grower's second wife (trained at the Kadoma cotton training centre, a hardworking and experienced irrigated cotton farmer) had been "evicted" from the scheme by a third new wife. While financed from the profits of cotton, the new wife unfortunately knew nothing about irrigated cotton and was not hardworking. The second wife moved off the scheme to set up a third hearth-hold on the husband's adjacent dryland operation. Tenancy is clearly only a part of a wider income strategy which includes both dryland and non-farm activities.

Households permanently resident in semi-arid to near-desert climates are likely to have a much higher dependence on non-farm and off-farm sources of income, other things being equal. If irrigation de-

velopment schemes aim to recruit local people (such that they can benefit from a more secure irrigated agriculture), it is quite logical that many prospective tenants are likely to be in business, trade or otherwise self-employed, rather than being "farmers". Thus beneath the smoke-screen of "full-time farmer", the diversification strategy persists. Tenants continue, in the social context of polygamous marriages (which serve to straddle the schemes), to operate businesses, be involved in local employment, have household members involved in a wider regional labour migrancy, and practice dryland crop and livestock farming.

By 1983-84 large debts began to accrue for some Middle Sabi growers. It was not possible to ascertain the reasons from ARDA records. ARDA reassessed the viability of both schemes and reviewed the current charges. ARDA was concerned with whether it was subsidizing the outgrowers in any way. Provided all real costs of ARDA are recouped and that the tenants achieve an income margin at least equivalent to an agricultural minimum wage, the schemes have been deemed viable.¹¹ Disaggregated, the ARDA figures reveal that many outgrowers, despite large turnovers, are failing or just breaking even after delivering tonnes of cotton and wheat to the marketing boards.

One explanation for this behaviour is that since 1985 the repayment of seasonal loans through the stop-order system has involved linking the Grain Marketing Board (GMB), the CMB, and the AFC computers. This had resulted in enormous delays in payments to the farmers—a problem felt throughout agriculture. These delays consolidated the rationale of a "parallel" marketing strategy. The tenants who receive large amounts of credit (linked to their CMB numbers) for their 10-hectare irrigated cotton farms, shorten these delays by selling a proportion of their cotton through CMB grower numbers other than their own. A fair proportion of their irrigated cotton crop is sold through a close relative's CMB grower number which is free of any AFC credits.

This is possible because (a) there are many more dryland than irrigated cotton enterprises, and (b) many of these enterprises are financed without formal credit. The net effect is that growers get some of their cash back within three months of harvesting (as opposed to nine months). Their official yields, productivity and financial situation, as recorded by the CMB through their "personal" stop order number, presents an incorrect record of their crop performance.

Some farmers who are more directly dependent

upon their tenancy for their income, have done this simply to improve appalling cash flows. They need cash to live, pay school fees and meet other recurrent expenses. Strategically they aim through their parallel marketing to ease their cash flow problems and at the same time maintain their credibility with ARDA and the AFC from year to year despite their apparently "poor" farming performance. Others have naïvely gone too far (such as bartering excessively large proportions of their cotton crop to a middleman for a new car) and have subsequently been evicted. The eviction of half of the tenants at Middle Sabi has left large sums of money yet to be accounted for by the administration. For those tenants who remained, the prospects of punitive deductions for all accumulated debts in a single season or year further fuelled the parallel marketing strategy.

ARDA head office, probably under pressure from the AFC, has subsequently told the estate management that these outgrower losses will simply have to be deducted from estate incomes. This has given rise to a new situation in which indebted tenants may get locked into the schemes. The estate management ensures that they will not be evicted until they have farmed their way out of their debts (under close supervision). This involves some creative accounting as ARDA is letting settler debts accrue to the ARDA estate while maintaining the growers' credit-worthiness with the AFC. Detailed crop forecasting of the outgrowers' cotton harvest has been carried out to prove the existence of, but ineffectively police, the parallel marketing.

The breakdown of communications between the tenants and the management appears to have had a domino effect in which causes and effects have become progressively more confused over time. This has been compounded by a degree of administrative discontinuity, especially a high turnover of settlement officers and, to a lesser extent, other ARDA staff. While we were unable to locate any of the evicted tenants, we understand that the original tenancy agreement included an option to buy the land after a two- to three-year probationary period. This option was resurrected for all growers when new agreements were signed by incoming tenants in 1985. Subject to a satisfactory probation, a large proportion of the growers should be able to begin to purchase their lands sometime in 1988.

The first round of major arrears on the scheme in 1982-84 resulted from tenants withholding rent in anticipation of approval of their right to purchase. This situation became ossified, ending in what was deemed a necessary and substantial change of ex-

ecutive and administrative staff on the Middle Sabi scheme. Two years of rent arrears rapidly turned into three years of rent arrears as new staff grappled with the current year's crops. Poor and non-existent records hampered their understanding of the situation in the preceding years. The discovery of the rent arrears and other misconduct led to the eviction of twenty-five growers in 1985.

Conclusion

The definition of contract farming given by Watts and Little at the beginning of this paper can be scrutinized in the light of the study's data presented here.

Is a forward market necessary to contract farming? For Zimbabwean sugarcane, it is. Although milling is based on extremely accurate crop projections, the system is quite flexible for planters because they comprise so small a fraction of total production. However, despite the seasonal peak of the aggregate harvest for tea, for the outgrowers at Katiyo the answer is no. Current factory capacity exceeds total deliveries of green leaf. The ARDA plantations are being expanded to close this gap between deliveries and processing capacity. However, as is the case with the sugarcane planters, the system is likely to remain quite flexible for tea outgrowers, given their small share of total production. If high quality is to be sustained, and until processing capacity is stretched, the timely harvesting of the green leaf will continue to take precedence over any forward contracts.

For cotton, where the prediction of yields is less accurate, a forward market is not necessary. Although the monopsonist parastatal Cotton Marketing Board has a weekly quota delivery system, everything is ultimately accepted. Seed cotton is far less dependant on immediate post-harvest processing than either tea or sugarcane.

Are factor and product markets for contracted crops linked by specific grower routines/practices and the provision of inputs and services? For the small planters of sugarcane, the answer is yes on all counts. The large planters are more autonomous in respect of their production, but still depend upon estate services, especially in emergencies. For tea, the outgrowers must satisfy much higher quality standards than the ARDA estate. The outgrowers also finance ARDA's outgrower extension advisory, marketing, credit and input services. Linkages are thus apparent in the provision of inputs and credit and in the strict quality control. Among those who produce cotton, the answer is no on all counts,

except for those on ARDA estates, to whom inputs and services are supplied. Here the linkage is not inherent in the inputs, the crop itself, or its marketing, but in the institutional structure of ARDA estates and AFC financing, which apply equally to all crops and are specific to the relationships with these organizations.

Is a differential allocation of production and/or marketing risk embodied in the contract itself? Clearly not for sugarcane, where the contract is a conditional clause in the land title, and the monopsonist estate system protects the minority planters. Tea production for the outgrowers is based on rainfall (as opposed to the irrigated estate system) and they therefore carry a higher degree of production risk. In a majority of cases, they are also dependent upon ARDA transport for collection and delivery of their green leaf to the factory. The experience at Katiyo illustrates, however, how buyer-processors, who promote outgrowers as a component of their overall operations, also face marketing risks.

ARDA has provided services and support to establish outgrowers who have subsequently shifted their green leaf deliveries to an adjacent private sector tea-processing factory (Eastern Highlands Tea Estates). While this shift has only involved a few growers (12 to 18) they control approximately 50 per cent of the outgrower production. The main reason for this practice appears to be a reduction in the marketing cost to the growers. A systematic difference in the long-run prices achieved on the world markets between the two factories could also be a motivating factor. (This was not assessed, neither was it put forward as a reason by the outgrowers).

Nor is it true that cotton producers, whether ARDA tenants or independent growers, are exposed to differential risks. They are all exposed to the same marketing risk through a monopsonist parastatal organization, and roughly similar production risks. Irrigated cotton is at less production risk than where it is grown on dryland. Yet there is an additional (financial) risk in using AFC credit to produce any crop anywhere, posed by delayed payout and problematic cash flows, which applies to all AFC credit packages and is not specific to cotton or outgrowers.

Clearly, the Watts and Little criteria have varying applicability to contract farming in Zimbabwe. At least for the three crops examined, there is no overall pattern. The Zimbabwean case studies suggest that a narrow emphasis on the nature of the contract itself is likely to overlook highly significant factors. These factors arise out of the institu-

tional nexus governing both the production and marketing of specific crops, which would still affect different crops differently even if (for argument's sake) contractual conditions were identical. Of particular importance in the Zimbabwean context are: firstly, the question of the structural viability of different arrangements for financing production, and the *scales*, rather than contracts, of production within these institutional nexuses. Secondly, the strategies that producers devise, in the face of such structural unviability, to guarantee their households' consumption requirements by manipulating their contractual agreements (by concentrating on sidelines, diverting outputs to other processors, or illegal parallel marketing under another name), are important. As yet, contract managers seem not to have formulated their own controls over such contractual breaches, but instead have settled into a "blind-eye" approach when the controls built into the institutional nexuses do not work as intended.

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Notes

1. Watts and Little, Preface to Jaffee, *Case Studies of Contract Farming*.
2. The Zimbabwe dollar (Z\$) is the unit of currency in Zimbabwe. Z\$1 = US\$ 0.50 (approximately, as at May 1989)
3. Thomas, *Sugar: Threat or Challenge*.
4. Wilson, Welman and Ellis, "Small farm sugarcane settlement scheme", p. 215.
5. Ibid., p. 212.
6. The Pungwe Valley estates are located on the border with Mozambique and were the locus of considerable military actions and the establishment of protected villages. In mid-1987, the Katiyo factory was partially destroyed by the Mozambique National Resistance (MNR). At independence there was apparently no attempt (nor interest on the part of former tenants) to re-establish the system at Rumbizi.
7. The aggregate average productivity of their land is half of that of the Katiyo Estate which operates irrigated clonal plantations.
8. Jackson, Collier and Conti, *Rural Development Policies*.
9. This viability was calculated on the basis of an annual crop budget and thereby ignored both the details of domestic cash flows and the differential need of growers with large and small households.
10. GFA, *Economic and Social Determinants*, p. 32.
11. This viability was calculated on the basis of an annual crop budget and thereby ignored both the details of domestic cash flows and the differential needs of growers with large and small households.

Conclusions

David J. Glover

*International Development Research Centre
Ottawa, Canada*

As the case studies have shown, there is a diversity of experience in the region with respect to the organization and performance of contract farming (CF) and outgrower schemes (OGS). This summary article attempts to highlight some of these variations, while at the same time drawing some conclusions and policy recommendations that may be applicable in a variety of contexts. It identifies some of the key determinants of success or failure, evaluates performance in several areas and examines some of the constraints to replicability. It concludes with some recommendations for public and private sector policy makers regarding the design and management of CF and OGS. An agenda for future research will be suggested.

Determinants

One of the purposes of this comparative study was to identify the key factors which determine the outcome of a contract farming situation, particularly the viability of the scheme and the distribution of benefits between the firms and its growers. One of its main hypotheses was that the nature of the crop and the technology used for its production and processing were the most crucial determinants.

As so frequently occurs, the research provided only partial support for the original hypothesis. The case studies have identified a great many determinants, so many that it is difficult to identify one or two as critical. The studies also demonstrated a wide range of experience: crops or land tenure systems that appeared to be conducive or detrimental in one country were neutral in another. In particular, the "technological determinism" hypothesis was not strongly supported. One complicating factor was that the principal contract crop, while showing certain common characteristics across countries, is often grown in conjunction with non-contract crops or off-farm income sources that vary from case to case. This complicates the analysis considerably.

With these caveats in mind, it is nevertheless possible to identify some of the factors which, in combination, have an important influence.

Nature of the crop. Though not of over-riding

importance, the technology used in crop production and processing is clearly significant. Some crops are easier to incorporate into smallholder OGS than others, while some present particular management problems.

It is clear, for example, that contract production of asparagus in Lesotho was a response to the labour requirements of the crop. Asparagus required frequent and careful attention, particularly at harvest time when picking must be carried out very early and very late in the day. It is impractical to provide this with hired labour or to ensure quality control and co-ordinated deliveries with open market sales. Smallholder production linked to the factory through contracts was the obvious answer.

Sugar, on the other hand, presents obvious management problems resulting from the scale on which processing must be provided. In many of the cases studied, this problem and others related to providing irrigation, co-ordinating harvest and delivery and assessing sucrose content were dealt with through simply assigning most production and harvest tasks to the company. In such cases, the outgrowers resemble hired workers. In some other cases, however, scheme authorities have made efforts to preserve some managerial role for producers; this usually required fairly elaborate quality assessment, control and payment procedures. The cases described in this volume provide some interesting examples. Cases outside the scope of this study (e.g., Ellis, 1988, on Fiji) also point to viable smallholder sugar systems.

Another situation in which the cropping system constrains the contracting scheme occurs with crops that have long gestation periods before the first harvest. In such cases, loans to growers from the project authority or the government are generally needed, creating the possibility of serious debt problems and barriers to exit. The problem is minimized where farmers have other sources of income, as the tea growers of Kenya did.

In general, the crops most easily incorporated into CF or OGS are likely to be those which require much highly-skilled labour and provide high revenues per hectare. Crops enjoying significant economies of scale in production are less suitable, though

imaginative management techniques can sometimes compensate.

Prices and pricing policy. A large and lucrative market will obviously increase the viability of any scheme. Lesotho's exports of asparagus to high-income consumers in the European Economic Community (EEC) is perhaps the clearest example. Zimbabwe's success in exporting cotton is another, in which the country identified a particular market niche and designed a production and marketing strategy to fit it. The gains may or may not be passed on to producers, but even the potential for benefit does not exist without adequate markets.

Where markets are depressed, as in the case of sugar, profits for processors or growers are difficult to achieve. Government pricing policy cannot alter this without a cost. In countries where the sugar industry is highly protected (e.g., Kenya), the prosperity of the grower or processor is achieved at the expense of the consumer. In cases where the retail sugar prices is controlled (e.g., Tanzania), low consumer prices exert downward pressure on the prices processors can offer farmers. The Kenya Tea Development Authority (KTDA) exemplifies the stimulus that buoyant world prices, free from export taxes, can provide for an industry.

Pricing policy is of such importance in determining the success or failure of a scheme that it often overshadows the organizational factors more easily controlled by scheme managers. More finely-tuned analysis of schemes, over periods of cyclic price fluctuations, might allow us to better separate price from non-price factors.

Land tenure. In a number of Southern African countries, individual ownership of land is not permitted under traditional tenure rules. It had been thought that this might impede access to credit, since land titles could not be used as collateral for loans. The experience is that contract farming makes land titles unnecessary for this purpose; the crop in itself is collateral and the firm or agricultural development bank generally deducts a sum for loan repayment before issuing crop payments to growers (the "stop payment" system).

A more frequent problem was the incentive and uncertainty problems created by land-use rights of insufficient duration or security. Resettlement schemes' management may want to facilitate the expulsion of non-performing farmers by providing short leases. As a result, farmers do not feel committed to the scheme and performance suffers. Lack of secure tenure also discourages growers from investing in their land. Finally, the buyer faces problems of insecure supply when tenure is inse-

cure because long-term supply is not assured. In Tanzania, for example, villages can reallocate land among their members and buyers have been unable to ensure that any given farmer will be able to continue producing the crop in question.

Access to land has a more general importance as well. It affects the barriers to entry and exit for the scheme, and access to food crops and off-farm income. Many OGS were established as resettlement schemes and outgrowers sometimes find it difficult to leave because land is unavailable elsewhere. They continue to participate in the scheme, not because the contract is attractive *per se* but because it provides access to land.

Microeconomic and "macro-institutional" policies. The Tanzania study brought out most clearly the importance of such factors as macroeconomic management and institutional stability. Since the *raison d'être* of CF and OGS is to co-ordinate commodity production and processing (frequently of perishable commodities), timely distribution of inputs and reliable transportation of harvested crops is critical. When foreign exchange shortages cause shortages of inputs or spare parts, there is little scheme managers can do to compensate. Management is also difficult when multiple institutions are involved, as occurred to some extent in the Zimbabwe cotton project. In that case, ARDA, the Cotton Marketing Board, the Grain Marketing Board and the Agricultural Finance Corporation all played a role in providing services, credit or payments. This situation was so complicated that, until the system was simplified, farmers evaded it through a parallel marketing system of their own. Furthermore, when responsibilities shift frequently from one institution to another, payments and records can be misplaced and communication with growers is undermined.

Payment systems. The form in which growers are paid can affect their performance. A variety of payment systems were revealed in the case studies. A common one, which can provide both stable income and incentives for timely delivery of high quality produce, provides an initial "base" payment on delivery, and a later payment based on the price in the final market, reflecting quality, seasonal premia and the like. This amounts, formally or informally, to profit sharing.

Payments are frequently made net of deductions for inputs, loans and services. These deductions can often constitute a large percentage of the gross price, particularly if they include fees related to project activities but unrelated to the contract crop, as in Swazi sugar. These deductions were a source

of much conflict, some of which could have been avoided if their method of calculation and expected magnitude had been clearly communicated initially.

Finally, who receives the payment is a key factor in providing incentives and in influencing expenditure patterns. Frequently these are distorted when contracts and payments go to male "heads of household", while farm management is carried out by women.

Monopoly/monopsony. The degree to which the firm is the only buyer of raw materials or seller of the final product can have an important effect on the scheme's viability and the distribution of its benefits. Normally, monopsony is viewed as detrimental to the seller's bargaining power and clearly the wide availability of alternative income sources is to the growers' benefit. Monopsony is often required, however, if the firm is to avoid free rider problems such as those which occurred in Kenya where the firm's expensive technical assistance to growers benefited other buyers. Diversion of production to other buyers when spot market prices exceed the contract price is also a significant problem, as in Lesotho, when it prevented the factory from drawing on supplies of other fruits and vegetables to operate at full capacity. Furthermore, monopoly can benefit growers if enables the firm to obtain a higher price in the final market and pass a share of it on to the growers.

More generally, any analysis of the effects of monopoly or monopsony must be carried out relative to some standard or alternative, e.g., the structure of the market before the firm entered. Contracts are responses to market imperfections—in a perfectly competitive market, with full information, no uncertainty, and so on, there would be no need for them. This sort of "monopoly" is a reflection of underlying market conditions; it is rarely created by a contract.

Barriers to entry/exit. Barriers to entry restrict participation in a scheme's benefits while barriers to exit can reduce a grower's bargaining power and welfare. The availability of alternatives and a credible threat to withdraw from the scheme provide important bargaining power and allow the grower to pursue more attractive options if the contract conditions decline over time. Barriers to entry and exit were found in a number of cases.

The most common barrier to entry was the limited capacity of the scheme: many had long queues of applicants for whom land or production quotas were not available. Scarcity of land outside the scheme was also a barrier to exit in countries

such as Zambia and Malawi. This was most often the case where OGS had been set up for resettlement purposes in land-scarce regions.

In Tanzania, legal prohibitions on the uprooting of tea were a barrier to exit. The perverse consequences of such restrictions are witnessed by the growers' response: neglecting the bushes, but not using the land for more productive purposes. In Swaziland, lack of tools to carry out farming prevented many growers from leaving the sugar scheme. These people had come to the scheme without tools through a resettlement programme, and the scheme provided the specialized equipment used for sugar.

Finally, the Swazi pineapple scheme required highly specialized cultivation skills which took time to acquire. The co-operative preferred to see as little entry or exit as possible because of the time and cost of training new members.

The existence of such barriers can make interpretation of data about scheme performance difficult. For example, a low turnover rate among growers might indicate satisfaction or it might result from high barriers to exit. Conversely, a high turnover rate, made possible by low barriers, might show a lot of short-term profit-taking by farmers.

Farmers participation in management. Schemes in which farmers played a role in managing the scheme, or at least in disseminating information, seem to have performed well. In the Swazi cases, farmers' organizations allowed good communication of the firm's requirements to growers. For pineapple, a growers' co-operative has actively taken over the scheme and runs it well. A similar role, with similar positive effects, has been established for the growers' co-operative in Lesotho. The effective absence of such a mechanism has contributed to poor communication about pricing policies in Malawi and Zimbabwe.

Diversification. The ability of farmers to earn income from other crops and/or non-farm employment influences their bargaining power with scheme management, their overall income level and their exposure to risk. Each of the schemes studied in Zimbabwe has at some point attempted to restrict its growers' activities outside the contract crop, for example allowing them to grow only the contract crop on their plot or admitting only full-time farmers. In each case, whether farmers evaded these restrictions (sugar and cotton) or the scheme became unviable (early attempts at smallholder tea projects). There are some indications that nutrition may also be better in households with diverse income sources, though more research would be needed to confirm this.

Performance

There are two obvious problems in summarizing the performance of OGS in East and Southern Africa. Variations in performance from case to case make generalizations difficult. It is also difficult to define performance standards: comparing these schemes to a Fortune 500 agribusiness firm in California, to a local parastatal, or to the hypothetical situation that would exist in the absence of an organized scheme, would all give very different scores.

With respect to generalizations across cases, the reader is advised to take these assessments with a grain of salt, referring to the country studies for finer distinctions. The assessments that follow refer to the majority of cases and provide, where feasible, an indication of variance across cases.

With respect to the second problem, the implicit standards employed are, first, a comparison with existing alternatives in the region, most commonly government or parastatal extension and marketing programs; and second, a judgement about whether these schemes could be achieving superior results by making better use of existing resources. In most of the areas examined below, the assessment is that performance is generally good relative to existing alternatives, but could be improved. In some cases, improvement could be achieved by scheme managers; in others, it would require changes in the national macro-policy environment or improvements in the economy.

Profitability for farmers. Data on this are not as extensive as one might wish, in part because farmers themselves have poor data. In many schemes, numerous deductions from crop payments make it difficult for farmers to assess their profit position. In most cases, however, farmers express satisfaction with their returns and many schemes have long queues for entry, both very clear indicators of the net benefits available.

In Lesotho, returns from asparagus were found to be much higher than those from the common alternative, maize. Swazi pineapple producers were conspicuously prosperous; many even owned cars. Malawi had long queues for the tea schemes, and Tanzanian tea also seemed to be profitable, providing better returns per hectare than coffee. In Kenya, tea, tobacco and French beans provided good returns; sweet corn was not as lucrative but had compensating advantages in the assured market and short growing season.

The most conspicuous exception to this pattern was sugar. In those cases where producer prices

reflected world prices, growers had initially done well with this crop, but are now experiencing serious price declines. Cotton in Zimbabwe was another problem case, where rainfed farmers of the scheme were faring much better than the outgrowers who had to pay charges for irrigation and the very heavy management structure.

Payments. Again, the variety of payment systems is notable and the case studies provide material for a more thorough analysis than space permits here. It would be interesting, for example, to look carefully at the different payment systems used in sugar in the region. Sugar schemes in Malawi use an equalization formula that takes into account the production levels of the farmer, the district and the scheme to compensate for variations in local growing conditions. In Tanzania, growers are paid by the average sucrose content of all cane received at the factory. Zimbabwe has an equalization formula that compensates for seasonal variations in sucrose and the different harvest dates affecting farmers. Other schemes pay simply by weight, with no allowance for sucrose.

A careful analysis of the costs, administrative complexity and incentive effects of each system would be worthwhile. An initial analysis yields two conclusions. First, schemes with complex equalization formulae have generally done a poor job of communicating their rationale to growers; they have produced misunderstanding and dissatisfaction more often than good performance or perceptions of equity. Second, there is little point in providing price incentives to growers for factors beyond their control. When the operations that affect sucrose content (cutting and transport) are carried out by the company, sucrose payments have no effect on growers' performance and are a needless and expensive complication.

Three aspects of payments are of interest to growers: the level (producer prices), the basis on which prices/payments are calculated, and promptness with which payments are made. Price levels are sometimes under the scheme managers' control and sometimes set or influenced by government policy. Price formulae are usually set by the scheme. As mentioned previously, there is some evidence that a system combining a base price with premia for quality or timely delivery provides a good combination of security and incentives. Promptness of payments varied considerably in our sample. In most cases, it was quite good; in others serious delays occurred. The cases where delays were serious usually occurred in schemes with complicated relationships among multiple institutions (Zim-

babwe) or in countries undergoing major economic stress (Tanzania); the latter probably reflected endemic problems more than management deficiencies in the schemes.

Input supply. Many of the comments made with respect to payments apply to input supply. Timely supply of fertilizers and agro-chemicals is important to growers and is a notorious weakness of public distribution systems. The performance of OGS systems appears to be somewhat better, but cannot overcome serious economy-wide shortages.

Credit. As in other areas, credit delivery systems varied, often involving some division of labour with public agencies. When schemes provided credit themselves it was usually in kind, in the form of inputs, payment for which was deducted from crop payments. Performance was generally very good, with Kenya and Swaziland reporting favourable rates and infrequent defaults. For many growers, availability of credit was one of the major advantages or membership in a scheme. Given the poor performance of many public and even NGO credit delivery schemes, and the on-going search for alternatives, the relatively good performance of CF and OGS in this area is quite noteworthy.

Security. One of the principal purposes of contract farming is to reduce risks for buyers and growers. Generally the buyers reduce the risk that the flow of raw material supplies will not match plant capacity. The growers bear the same production risks that they would when producing for the market (i.e., those resulting from climatic conditions) while reducing or eliminating their marketing risk. A fixed price contract for a specified volume reduces the latter type of risk; a fixed price contract for the production from a given hectareage virtually eliminates it.

In some of the cases examined, farmers continued to bear heavy market risks. This was most notable in Tanzania, where growers had no written contracts and tea processing plants had several capacity problems that frequently caused them to turn away outgrowers' deliveries. This situation was likely to be more serious in cases where outgrowers were marginal, providing only a small percentage of raw materials to a plant which relied principally on output from estates.

In a few cases, however, security was sufficient to compensate for relatively low prices. Green bean production in Kenya was an example, where the guaranteed market provided a stable element in farmers' income. Depending on local circumstances, the contract crop may provide a small but secure income element in a farm enterprise with variable

cash flow; in other cases, it may provide a seasonal injection of cash into a farm enterprise based largely on subsistence.

Food supply. Generally speaking, when land was fairly abundant and farmers had the freedom to diversify their crops and income sources, food supply was adequate and no special measures were needed from the scheme authorities. In Swaziland, for example, households produced much of their food on family plots outside the scheme, allowing them to use their scheme plots for sugar. In Tanzania, tea displaced some food crops, but the tea scheme stimulated and diversified the local economy through road building, expansion of trade and so on, so that tea income easily covered food purchases. Reduction of food supply was most likely to be a problem in areas where availability of land was a constraint.

Research. Generally, OGS are less likely to carry out research than to provide extension for techniques developed elsewhere. Some technological research is done on the Tanzanian sugar schemes and elsewhere. Basic technological research on sugar in Zimbabwe has produced some important breakthroughs. Given the high costs of basic research, it is probably not sensible for schemes to attempt elaborate technological research programmes. However, the case of cotton in Zimbabwe seems to indicate that the payoffs to market research can be very high with relatively modest costs. The outstanding performance of the Zimbabwe cotton scheme in this respect merits emulation.

Extension. Virtually all schemes had active extension programmes with results equal to and usually better than those of national programmes. Performance was particularly good in Swaziland. However, there are indications that performance could be better. There are signs, for example, that KTDA in Kenya is "resting on its laurels" to some extent; having achieved quite high quality, the Authority is not as aggressive as it could be in seeking out opportunities to raise quality still higher or to improve yields. The Zimbabwean cotton service had not changed its programme in years or tailored it to different types of farmers; the service was useful to new farmers, but did little to help experienced farmers to continue to improve. This scheme was also weak in providing intelligence to scheme managers; although growers with identical conditions often had very different yields, extensionists were unable to explain this or to learn from the experience of the more successful growers.

A variety of extension systems were found in the studies. In many cases, some sort of relationship

with a government programme is involved. In the Malawi tea schemes, for example, the scheme provides tea specialists while government extension agents advise farmers on other crops. In Zambia, extensionists were provided by the government until recently, but the scheme topped up their salaries and provided transport for them, apparently with good results.

These examples raise a couple of potential problems or questions about the organization which are not easily answered. One is the diversion of resources from national programmes into the OGS, where salaries and facilities tend to be better. If this occurs, then good results on the schemes will be achieved at the expense of the country's overall agricultural performance. Another is the long-standing conflict between crop-specialized extension systems and those which service all of the grower's crops. Crop-specialized systems have the advantage of permitting specialization and more detailed knowledge by the extension agent. The drawbacks, of course, are lack of attention to relationships among other crops in the farming system and some inefficiencies in service delivery as more than one agent must travel to service each farm.

It is unlikely that the debate over single crop versus multicrop extension systems will ever be completely resolved. However, the case studies tend to give more support for multicrop systems. Farmers seemed to prefer the farm management approach provided by multicrop extensionists (BAT in Kenya, for example) and it could be argued that specialized extension services are something of a luxury in poor countries.

Finally, a careful assessment of extension programmes must include a look at their cost. Unfortunately, the data in most cases do not permit this. There are grounds for concern about the high ratio of extensionists to farmers in some schemes and the difficulty of sustaining this or replicating it on other schemes. In Swaziland for example, the pineapple and sugar schemes had ratios of 1:65 and 1:19 respectively, compared to a national average of 1:400.

Management efficiency and cost. The case studies tended to emphasize farm-level data; access to data on management costs was less accessible. It is difficult, therefore, to assess performance except to note the generally wide range of services provided, the extent of the scheme's intervention in farm management (in many of the sugar cases, for example) and the high ratio of staff to farmers (e.g., extensionists in Swaziland). Intuitively, one would expect these to be costly and to limit the applicabil-

ity of such systems to lower value crops. This subject receives more extensive treatment under "Constraints to Replicability".

Opportunities for farmer participation. Across the board, performance was weakest in the area of farmer participation. Only in Lesotho did a strong growers' co-operative play an active and expanding role in the scheme. Elsewhere, few co-operatives or farmers' organizations were operative. Aside from an incipient case in Lesotho, there were no cases where the KTDA model of "corporate participation" had been picked up (i.e., farmers holding shares in the venture and seats on its Board of Directors). Even in KTDA, there are doubts about how much clout the growers' representatives really exert on the Board. Much of the poor communication, and apparently high management costs, that surfaced in the case studies can be directly attributed to lack of farmer participation in management.

Constraints to Replicability

Few of the cases examined were unqualified successes; each had some weaknesses and a few performed so poorly that no one would want to replicate their experience. However, the study did reveal many positive elements in most of the cases. How can these positive experiences be more widely diffused? What constrains their wider adoption?

Management cost and complexity. As mentioned earlier, OGS demand skilled managers and technicians, who are often in short supply. Maintaining high ratios of extension agents to farmers, co-ordinating harvest and delivery, signing contracts and communicating requirements to large number of farmers are all costly. Crops which fetch high prices (e.g., in export markets or protected domestic markets) provided margins wide enough to cover these costs, but low value basic food crops generally do not. However, basic grains that are not perishable and do not require strict quality or prompt harvesting or processing generally do not require contract arrangements. It is therefore unlikely that replication of cash crop OGS to other crops is necessary or feasible; the schemes will probably continue to fill a relatively restricted niche.

Market factors and infrastructure. Potential profits are greatest in high-value export markets. As yet, African participation in such markets is relatively limited, compared with Central American producers, for example. Whether new entrants can repeat the success of vegetable exporters in Kenya and Lesotho will depend on a number of factors, including market-related factors and infrastructure.

Market-related factors include awareness of the characteristics of consumer and retail demand (quality, packaging, seasonality), information on technical and marketing innovations of competitors, awareness of tariff and non-tariff barriers and preferences, and access to wholesale and retail marketing channels via brokers or multinational corporations.

Infrastructure provides another set of constraints. Delicate and perishable goods require good roads, refrigerated trucks and storage, and frequent and reliable air transport. Distance to the final market is an important factor, which can be partly compensated for by better infrastructure in distant countries, but does impose a significant constraint. A North African country may be able to ship by sea what a Southern African country must send by air. Unless the more distant country has offsetting advantages or specializes in products with very high value-to-weight ratios, distance will limit the range of countries in which export-oriented OGS can succeed.

Land tenure. Land tenure systems which do not provide leases of sufficient duration or security to safeguard tenants' investments are not conducive to OGS. Nor are systems which provide no means by which management can sanction or expel non-performing growers, as in VIF in Swaziland.

Pricing policy. One of the reasons for KTDA's success in Kenya appears to be the high world prices for tea and a 1960 agreement that government would not impose an export tax on it. Such agreements would have been difficult to achieve in the 1960s and 1970s, though in today's climate of conditionality and enforced liberalization they may reappear. Replicating KTDA's success by copying its internal organization would not succeed without similar pricing policies.

Farmers' management skills. Outgrower schemes make heavy demands, not only on project managers, but on farmers themselves. Illiteracy, lack of basic accounting skills, and lack of experience in handling large sums of money have led to deception or misperceptions of contracting practices, poor communication of the scheme's requirements, poor use of cash income generated by the project, and other problems. In such circumstances, it is tempting for project authorities to adopt a top-down centralized management style, rather than attempting the more difficult process of educating and communicating with growers.

Policy Recommendations

Many recommendations as to how to improve the design and implementation of OGS are implicit in previous sections. Others can be found in Glover, 1987. This section will make some of these explicit and highlight others not alluded to previously. These recommendations fall into seven categories.

Negotiation. In negotiating projects with multinational corporations or lending agencies, developing country policy-makers are often unaware of the kinds of bargains that have been struck in other countries, or lack experience or information that would enable them to participate in negotiations on an equal footing. It would be very useful if agencies such as the UN Centre on Transnational Corporations or the Commonwealth Secretariat were to keep a registry of existing agreements and provide advisory services to countries entering negotiations. It has also been suggested that host countries develop a code of conduct or Contract Farming Act, which would specify certain minimum conditions for contracts and provide incentives for investors.

Monitoring and evaluation. Following negotiations of an initial agreement, government agencies frequently turn their attention to other pressing matters and do not follow up the agreement's implementation. More careful monitoring of schemes, and periodic evaluation, would be beneficial.

It would also be useful to put into place arbitration mechanisms that would come into play in the event of disputes between growers and processors over quality standards, delays in delivery or payments, defaults on loans, and the like.

Training. Many of the communication problems that occur between growers and project managers could be reduced by providing short training courses to farmers in basic literacy, accounting and cash management. Quasi-training activities, such as group meetings to explain contract terms, interest rates, calculation of deductions, and so on would improve efficiency and reduce the likelihood of conflict. For local firms wishing to enter export markets, training courses in export marketing would be useful. A *Contract Farming Handbook* for entrepreneurs and investment bankers would also be useful; the handbook might include a checklist of key features (similar to the determinants described above) and sample contracts.

Legal aspects. Land tenure arrangements often require modification to make them compatible with contract farming, particularly in perennial crops. Land leases, where used, should be of sufficient duration and security to provide some incentive for

investment by tenants.

Contracts should be signed with those who actually manage farm operations. Although implementation and enforcement of contracts is much more important than what appears on paper, the language and conditions of contracts should not be one sided (such as those that impose strict obligations on growers while requiring the firm to "make every effort"). Better phrasing of contracts would at least improve the scheme's image and avoid discouraging new outgrowers.

Relationships with national agencies. The relationship between the project authority and national government agencies for extension, credit and input distribution is often problematic. One of the principal advantages of OGS is their frequently superior performance in these areas, resulting from smaller scale, specialization, autonomy and other factors. It would be wasteful not to take advantage of these strengths. Yet duplicating, ignoring or, worse still, running down the resources of national programmes by drawing away their best people is not in the country's best interest. Working relationships should be established which provide for a deliberately considered division of labour. What this might consist of is difficult to say. One example of this type of relationship, suggested by Ayako, is to rotate extensionists between OGS and government agencies. These secondments could be used as rewards for good performance in the national service and upgrade and refresh staff, who would then bring new skills back to their home institutions.

Pricing policy. It is tempting to regulate producer prices in order to provide growers with a "fair" return to their labour. This is rarely effective, for several reasons. Setting a fair price is difficult, requiring knowledge of costs of production and demand, and changes in these over time. Even if an appropriate price could be set, it is almost impossible to enforce it, since the contracting relationship involves so many important non-price variables. The firm can easily manipulate quality standards, raise the prices it charges for inputs or delay payments and collect the interest in the meantime. It is usually futile to try to police the many elements that determine the effective producer price.

Although price regulation is generally not feasible, it is possible to make more imaginative use of price formulae than is often the case. Many of the behaviours that scheme managers try to induce through directives or contract provisions (e.g. early planting, quality control) can more easily be affected by pricing. The country studies provided many examples and a good short listing is provided

by Kirsch:

... prices calculated according to the state of the market (in between the market price and a basic price, average prices over a period of time, pooling prices), prices taken from current market prices (fixed difference to market prices, market prices limited to a fixed latitude between maximum and minimum fixed prices, average prices taken from several quotations) ...¹

In general, such formulae should be sufficiently sensitive to provide clear signals and incentives to producers, without being so complicated that they lead to excessive administrative costs and delays in payments.

The principle of pricing formulae that take into account world prices can also be applied to other variables. For example, interest rates on outstanding debts can be inversely linked to world or local interest rates, so that growers get some relief when rates are extremely high, and pay back more rapidly when they are low. Such formulae have been used with some success in Indonesia.

Management. The case studies show that attempts to provide very tight centralized management are likely to be very costly and forego the advantages of farmer's initiative and farm-specific knowledge. The more successful schemes have been those which use a looser management style, which emphasizes:

- farmer participation in project management and income, usually through some form of profit sharing
- economic incentives, particularly reliance on finely tuned pricing formulae to elicit production of desired timing and quality

This approach involves less reliance on central legal and contractual management and legal sanctions and more on farmers' self interest and economic incentives. In principle, this approach should reduce the number of staff needed to prepare, monitor and enforce contractual obligations; and the adversarial quality of the firm/grower relationship and the corresponding potential for conflict.

Future Research Issues

There are by now enough case studies of contract farming—in this volume and elsewhere—that the marginal return to additional studies using the same research questions is probably not high.

However, more intensive comparative analyses of some aspects of the studies, or empirical research on different kinds of schemes might well be productive. Some suggested topics are:

- procedures and criteria used to recruit, select and train outgrowers in new schemes, particularly resettlement schemes. Which procedures work best? What are the relative benefits of drawing on local farmers, immigrants to the region or squatters?
- alternative credit delivery systems including variations in the roles and relationships of processors, local agricultural development banks, growers and growers' organizations. Have group credit programmes, analogous to those used by the Grameen Bank, been used successfully in contract farming schemes?
- comparative analysis of incentive effects and administrative costs of alternative pricing formulae/payment systems
- comparative study of sugar, including costs of production, payment systems, national pricing and import substitution strategies
- case studies of projects that have failed and disappeared or been converted to estates

- case studies of contract farming in poultry and livestock.

Sources

The conclusions presented in this paper are based on papers and discussions at the October 1988 meeting of the IDRC-financed network on Contract Farming and Outgrowers Schemes in East and Southern Africa.

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Notes

1. Kirsch, *Vertical Cooperation among Agricultural Producers*.

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