10 Contract Farming and Commercialization of Agriculture in Developing Countries

DAVID GLOVER

Introduction

The distributional benefits of commercialization of agriculture, access to commercialization opportunities, and sharing of commercialization risks are functions of institutional arrangements. Obviously, the indirect food security and nutritional effects are, thereby, partly a function of such institutional arrangements. This chapter explores the relevance to food security of one form of contractual relationship in agriculture: formal contracts between producers and buyers (generally processors or exporters), a production and marketing system known as contract farming. The chapter does not refer to the extensive literature on informal contractual relations, such as sharecropping, or on traditional systems of contract farming, such as the extensive "strange farmer" system in West Africa's groundnut sector. The chapter draws generalizations and conclusions from studies done by the author and by other researchers. The latter include two research networks initiated by the author. One network surveyed the experience with contract farming in seven East and Southern African countries (*Eastern Africa Economic Review* 1989); the second examined the experience in Thailand, Malaysia, and the Philippines (Glover and Lim, forthcoming).[1]

The first section provides a basic definition and description of contract farming.[2] The second section describes several aspects of contract farming that are relevant to food security and provides evidence about the effects where it is available and plausible estimates where evidence is not available. The third section presents some corresponding policy recommendations.

1. The research was financed by the International Development Research Centre.
2. Further details can be found in Glover (1984) or Minot (1986).

Theory and Practice of Contract Farming

In contract farming, a central processing or exporting unit purchases the harvests of independent farmers. These purchases can supplement or substitute for company production. The terms of the purchase are arranged in advance through contracts, the exact nature of which can vary considerably from case to case. Contracts are generally signed at planting time and specify how much produce the company will buy and at what price. Often the company provides credit, inputs, farm machinery rentals, and technical advice. It always retains the right to reject substandard produce.

Contracting is most commonly practiced by food processing companies. Since their processing plants have high fixed costs, these companies have an interest in keeping raw material inflows at a steady level, close to plant capacity. Reliance on open market purchases is unlikely to achieve this interest. Contracts, on the other hand, can specify planting dates (and thus delivery dates) as well as total quantities to be delivered. Contracting reduces much of the uncertainty that would exist if the company simply bought crops on the open market, and gives the company some control over the production process (for example, over the variety grown). There is no reason, of course, for a company not to use more than one method of obtaining its supplies, and some companies use a combination of company farms, contract growers, and open market purchases.

Many contract-farming schemes in less developed countries are multipartite arrangements involving private firms (usually foreign, but occasionally local), the host-country government, and international aid or lending agencies, such as the U.S. Agency for International Development (USAID), the World Bank, or the Commonwealth Development Corporation (CDC). The CDC has been particularly active in this type of scheme. In one common variation, a national development bank provides growers with credit for the purchase of fertilizer, seeds, and other inputs. At harvest time, the company pays growers the contract price, but takes off a sum that goes to the bank to repay its loan to the grower. In this system, private companies avoid the problems of assessing creditworthiness and prosecuting defaulters. In some cases, government agencies provide inputs or technical assistance.

Contract-farming schemes tend to be of two types. One type produces traditional tropical commodities, such as sugar, rubber, or oil palm, which tend to be produced at lowest cost on large tracts of land. Contract-farming schemes in such commodities usually involve a large number of growers, tight central control, and provision of numerous services by the central processing unit (for example, irrigation, harvest-

ing, and aerial spraying). There is usually heavy involvement of external donors in these schemes. Many such schemes originated as resettlement schemes. In extreme cases, some schemes are, in effect, disguised plantations, for example, the Papua New Guinea cardamom scheme (see chapter 14). These large projects, often referred to as outgrower schemes, are particularly common in Indonesia and Malaysia (rubber and oil palm) and in Africa (oil palm, sugar, and tea). The case studies in Kenya, Malawi, and Sierra Leone provide insights at the scheme and household levels for these types of schemes (see chapters 16, 20, and 21).

Another type of contract-farming scheme, usually on a smaller scale and with more private-sector involvement and less tight centralized control, is frequently used in fruit and vegetable production, particularly in Central America and Thailand. Most frequently, this type of scheme entails the export of high-value items, such as asparagus, cucumbers, melons, or strawberries, with the company providing quality control, brand names, and marketing channels. Business-oriented growers, cooperatives, and individual small farmers are all involved. Fresh vegetable exports from Guatemala are an example of such schemes (see chapter 12). Total developing-country employment in contract farming of these nontraditional crops is much less than in traditional crops, such as bananas and sugar. However, there is some evidence that contract farming of nontraditional crops is expanding at a faster rate and that these labor-intensive products are more promising outlets for small farmers.

Contract Farming, Commercialization, and the Food Question

Several aspects of contract farming impinge on food production and consumption by growers, their families and employees, and other segments of the population. This section attempts to summarize some of the evidence about the relevant effects of contract farming. The sample of cases studied in East and Southern Africa is presented in table 10.1. An inventory of schemes in the region from which the sample was selected indicates a wide range in size of outgrower schemes. It is noteworthy that contract farming need not necessarily entail large units (Glover and Kusterer 1990).

Income Generation via Market Access

One of the key features of contract farming is that it provides farmers with access to markets that would not otherwise have been available to them. Without the quality control and tight coordination offered by contract farming, it is frequently unlikely that smallholders would be able to sell perishable goods overseas through open market sales. The most significant income increases have been generated in

TABLE 10.1 Network of case studies in East and Southern Africa, by crop

Country	Sugar	Tea	Cotton	Nontraditional[a] Crop
Kenya	X[b]	X[b]		X
Tanzania	X	X		
Malawi	X	X		
Zambia	X		X	
Zimbabwe	X		X	X
Swaziland			X	X
Lesotho				X

[a]For example, fruits, vegetables, and oilseeds.
[b]From secondary data.

those schemes in which smallholders gain access to lucrative export markets for labor-intensive luxury crops (Glover 1986). Important income increases have resulted from traditional crops as well, however, particularly tea. The Kenya Tea Development Authority's success in this field is often cited (Lamb and Muller 1982).

Data on income generation are difficult to compile, partly because farmers themselves have poor data. In many schemes, numerous deductions from crop payments made it difficult for farmers to assess their profit position. In most cases studied in the two research networks mentioned earlier, farmers expressed satisfaction with their returns and many schemes had long queues for entry, both clear indicators of the net benefits available from such schemes.

We basically find that substantial income increases can and do result from contract farming. Furthermore, contract farming in cash crops often brings significant changes with respect to both size and frequency of payments to the recipients. It is difficult to generalize about the direction in which contract farming will shift the payment system—this is highly case specific. A contract-farming crop with a fairly continuous harvest and payments may replace one harvested and sold once a year in the local market, or the reverse may be true. It is also possible for contract-farming schemes to separate the payment system from the harvest cycle by providing weekly or monthly advances that resemble a wage, as often occurs in outgrower schemes. This is a possibility in contract-farming schemes; in open market sales it is not, at least not without recourse to the capital market.

Displacement of Alternative Crops

Contract farming could reduce food production if a new contract cash crop displaced a previously grown food crop. Evidence suggests that

such displacement does not frequently occur when farmers are allowed to make their own decisions. In such cases, the contract crop tends to displace a less profitable cash crop rather than a food crop.

In centrally managed schemes, these decisions are often made by the scheme authority. Many schemes require growers to maintain a certain acreage of food crops, though a few have gone in the other direction and required growers to specialize in the contract crop. A series of African case studies found that 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 (*Eastern Africa Economic Review* 1989). 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. Reduction of food supply was most likely to be a problem in areas where availability of land was a constraint. Schemes that did restrict production of noncontract crops tended to encounter serious problems, not only in food production, but also in maintaining adequate levels of recruitment and participation in the schemes. For example, some schemes in Zimbabwe restricted farmers by allowing them to grow only the contract crop on their plot or by admitting only full-time farmers, thus forcing them to forgo off-farm income. In each case, farmers either evaded the restrictions (sugar and cotton schemes) or the scheme became unviable (tea schemes).

Local agroclimatic and market conditions are sometimes more suitable for cash or export crops than food crops. In such cases, there can be significant welfare gains from trade. For example, a cooperative of former banana workers was formed in Honduras in the early 1960s to farm land formerly given over to bananas. The cooperative experimented with many food crops but found that they did not grow well in their soil and drainage conditions. On reverting to bananas (the export crop), the cooperative's income increased to levels far above those of food crop producers.

A key feature of contract farming, which bears on production response, is risk sharing and risk reduction. In fact, contracting is fundamentally a way of allocating risk between the company and its growers. The latter assume most of the risks associated with production, while the former assumes the risks of marketing the final product. Total risk is reduced relative to a noncontract situation of that crop. However, it is unclear whether total risk for the farmer is reduced, since nontraditional crops are inherently risky; when the addition of the contract crop to the farm's product increases total risk for the farm, it may induce a farmer to increase the percentage of subsistence requirements.

Multiplier Effects for Employment, Infrastructure, and Market Development

Local governments often favor contract farming in the belief that it will produce greater spillover or linkage effects with the local economy than would plantation production. Studies have found significant variations in this respect. For labor-intensive fruit and vegetable crops, a multiplier is clearly present in the great expansion of daily farm labor employment made necessary by the new contracted crops. This was found to be the case with cauliflower and broccoli cultivation in Guatemala (Glover and Kusterer 1990). There are also significant new employment opportunities in the transport and processing sectors. Again, the effects of this employment and income generation on food supply will depend on income elasticities of demand by laborers and on domestic supply response to that demand.

For traditional export crops, and in cases where a highly mechanized and centralized production system is transferred to large outgrowers, the situation is different. Here, the nominal transfer of legal responsibilities via a contract does little to change the economic imperatives of the production system. In the Central American banana industry, for example, the linkage effects of local production are not much greater than those provided by transnational corporation production; nearly all of the inputs used by associate producers are provided by exporting companies. Moreover, as Ellis (1977) shows, the linkage effects of any form of banana production are very slight.

In addition to direct employment effects, some large contract-farming schemes in remote areas have had broader rural development impacts. To some extent, these schemes have acted as growth poles. This has occurred in sugar schemes in western Kenya, tea schemes in Tanzania, and in a frontier asparagus scheme in Peru: all schemes have performed well in terms of opening up underdeveloped areas of the countries in which they are located. Construction of roads and other infrastructure and expansion of interregional trade have been some of the direct consequences of the establishment of contract-farming schemes. Thus, while infrastructure is a precondition for many contract-farming schemes and a driving force of agricultural commercialization, as pointed out in chapter 8, it is also sometimes the case that the growth potentials of commercialization push infrastructure development, which then may result in further second-round benefits from the infrastructure. There is some evidence that these rural development effects could have been greater if more deliberate planning had been carried out and local resources had been used more frequently. The chief relevance of contract

farming as an organizational form in this respect is that the market, on its own, was not opening up these regions.

Market development also results from the production process itself in some environments: the reject rate in fruit and vegetable export operations, which usually rely on contract farming, often reaches 50 percent. These rejects—often set aside merely for reasons of ripeness or size—can be sold in local markets for a fraction of the price paid by industrial-country consumers. The produce has nutritional value and can complement the traditional starchy diet of low-income consumers. In some cases, exotic vegetables are not well accepted initially but catch on as their characteristics and preparation methods become better known. In Guatemala, for example, reject cauliflower and broccoli are so widely and cheaply available that they have become a nutritious staple of the poorest people; the leaves and stalks are also used as animal feed and as an organic fertilizer for the noncontracted (mainly subsistence) crop fields (Glover and Kusterer 1990).

Effects on Extension, Inputs, and Services

The contractual relationship between growers and a processing company in contract farming provides the latter with the assurance that it can appropriate a share of the benefits from the investments it makes in production at the farm level. This is most apparent in the areas of extension and input provision. The company has a direct interest in providing effective extension services because it wants high-quality, low-cost produce. Public extension services have no such incentive and regulate their performance in accordance with bureaucratically defined criteria (for example, number of farmers served, quantity of inputs distributed). These criteria are much less effective in assessing performance and providing incentives than the profit-related criteria used by contracting companies.

A pirori, then, one would expect the quality of extension provided in contract farming to be superior to that found in purely public or market-oriented systems. In most private contract-farming schemes, extension tends to deal only with the contract crop, although some of the multipartite schemes in Africa use a multicrop approach.

Some of the production techniques learned in contract-farming schemes are highly crop specific and are not transferable to other commodities. Management skills learned through participation in an agribusiness scheme are more widely applicable, however, and include accounting practices, negotiating skills, and awareness of the importance of quality, characteristics of export markets, and contract provisions. Generally speaking, there tends to be some transfer of contract-farming–

induced production and management skills to other cash crops and to the farm enterprise as a whole.

The situation is similar with respect to input provision. The volume and timeliness of delivery of agrochemicals should be close to optimal in a contract-farming situation, since the company has a secure means of ensuring repayment of in-kind credit through deductions from crop payments. Chemicals applied can have residual effects on adjacent or rotated food crops. In addition, inputs delivered for use on the contract crop are occasionally (and illicitly) diverted to food crops, depending on the farmer's estimate of relative marginal returns. Irrigation water provided through contract-farming schemes has also been used for secondary crops, as in some African sugar schemes that support the production of vegetables for local markets.

On most schemes, basic agronomic research is fairly limited; the emphasis is on disseminating existing technologies rather than on developing new ones. There is, however, unexplored potential for contract-farming schemes as sites for the testing and introduction of new food crop technologies. At present, much basic and adaptive research is carried out on experiment stations and tested in study villages under fairly tight control. From there to nationwide dissemination is a big leap; contract-farming schemes could provide an intermediate step.

Policy Implications

A number of policy implications flow from the effects described above. The chapter's basic hypothesis is that the largest and most direct effect of contract farming on food security is likely to result from income changes and that this effect will be positive. Other aspects of the contracting relationship may have moderate to weak effects in either a positive or negative direction (see table 10.2). The priorities, then, are first, to maximize the income-generating effects of contracting schemes; second, to moderate those secondary aspects that have potential negative effects; and third, to increase the secondary positive effects.

Measures to improve the financial viability of schemes are of particular importance. These measures include setting appropriate pricing policies, rewarding risk taking by private companies in new crops or regions, and improving the autonomy and accountability of parastatals. Since much income is generated as a result of access to export markets, identification of potentials of nontraditional exports, studies of marketing channels, and market promotion efforts will be useful.

Payment systems can be modified to provide smaller, more frequent payments. Where feasible, project authorities should sign contracts and

TABLE 10.2 Contract farming linkages to food security and policy implications

Contract Farming Variable	Likely Effect on Household Food Security	Policy Recommendation
Income generation via market access	Strong +	Measures to improve financial viability; market promotion
Payment system		
Size/frequency	Indeterminate	Provide small, frequent payments and disbursements to women
Recipient	Strong −	
Displacement of alternative crops	Weak −	Leave cropping decisions to farmers
Multiplier effects	Moderately + on decreased supply	Greater use of local resources
Extension	Moderate +	Multicrop extension; emphasis on management skills
Input and service provision	Moderate +	None
Research	Potentially +	Testing and trials of food crops using contract-farming infrastructure
Risk	Indeterminate	None
Other qualifications		
Import substitution	Moderate +	Attention to price trends in tradables
Comparative advantage	Moderate +	Attention to price trends in tradables
Use of rejects	Moderate +	Marketing and information programs
Pricing policy	Moderate −	Realistic price levels

disburse payments to household members who actually carry out the work. Where these are women, there will likely be a positive effect on food expenditures.

Farmers should be given as much freedom as feasible in managing their enterprises, particularly with respect to choice of crop mix and off-farm activities. Restrictions on noncontract crop activities should be avoided.

The multiplier effects of contract farming can be maximized by encouraging project authorities to plan for development of investment opportunities into which growers can channel their new income. Greater use of local resources in transport, maintenance, and manufactured goods provision can also make a contribution.

Extension services should be designed to provide learning effects that go beyond production of the contract crop. It is unlikely that the

debate over single-crop versus multicrop extension systems will ever be resolved: it is difficult to assess the trade-off between the technical superiority that comes from specialization and the efficiency in delivery that comes from multicrop extension. Contract farming studies, however, tend to give more support to the latter. Farmers seem to prefer the farm management approach provided by multicrop extensionists, and it could be argued that specialized extension services are often not feasible in very poor countries.

As noted previously, many of the benefits from contract-farming extension lie not in production but in management. These skills are more readily transferable to food crops than are production techniques. Management skills are most likely to be developed in schemes where producer prices closely reflect quality and final market prices; where farmers receive detailed accounts of the company's payments for crops and deductions for inputs; and where farmers are given substantial responsibility for managing their operations, rather than operating within a scheme where control is highly centralized.

The use of rejects and by-products from cash crops, such as fruits and vegetables, can often be increased through greater attention to marketing and information. The establishment of cooperatives to market rejected produce locally has been very successful (for example, in Honduras), and programs in local markets to inform consumers about the nutritional value and methods of storing and preparing nontraditional foods can be useful.