

Linking agribusiness and small-scale farmers in developing countries: is there a new role for contract farming?

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1. INTRODUCTION

Efforts to develop the agricultural sector in developing countries are now taking place against the background of major structural change in the world agricultural industry. In many developed countries, agricultural production is changing from an industry dominated by family-based, small-scale farms or firms to one of larger firms that are more tightly aligned across the production and distribution value chain (Boehlje, 2000). In addition, the trend of market-orientated reforms, following multilateral trade liberalisation and especially structural adjustment programmes in developing countries, has led to the increased integration of world markets (Reardon & Barrett, 2000). This has meant that farmers in the developing world are now, more than ever, linked to consumers and corporations of the rich nations. Although most of the changes in agricultural and food markets are taking place in developed countries, they have far-reaching implications for agricultural development efforts in developing countries.

The changes in food and agricultural markets (the so-called industrialisation of agriculture) have influenced the need for higher levels of managed coordination. This has resulted in the introduction of different forms of vertical integration and alliances, which have become a dominant feature of agricultural supply chains. Allied to these changes is a worldwide increase in consumer demand for differentiated agricultural products that are relatively labour intensive (Rhodes, 1993; Royer, 1995; Pasour, 1998).

These consumer demands, combined with the reality that food safety issues are more likely to be a concern in the case of fresh food products, have led to major concerns for developing countries. Fresh food products, which include fresh meat, seafood, vegetables and fruits, account for half the value of total food and agricultural exports from developing countries (Unneveher, 2000). The need to control for high perishability and safe handling involves specialised production, packing techniques and refrigerated transport, all of which require large capital investments and also investment in research, development and marketing, which small and medium-sized enterprises cannot easily afford.

However, it is often only the well-endowed and skilled that have the ability to be part of these coordinated marketing chains and alliances. There is, therefore, a danger that the requirements, quality standards and food safety rules of the consumers and corporations (supermarkets) in the developed countries can act as effective barriers to participation in the high-value chains by small exporters and, to some extent, small producers. Only a small number of farmers in developing countries have the ability and luxury to be part of these lucrative markets and for them the reward is substantial.

Recent studies of the managerial economics of industrialised agriculture have revealed crucial new insights into the economic rationale for higher levels of managed coordination as a choice of governance structure. In conjunction with this, the history of vertical coordination projects in developing countries has provided many lessons and a reference framework against which future development can be evaluated. All of these could pioneer a new approach to improve our understanding of problems of market access facing farmers in developing countries. This new approach, based on the new institutional economic theory, argues, among other things, that we now have economic actors engaging in transactions rather than a large number of atomistic firms constituting a 'market'.

There are serious concerns about the ability of small farms and also small agribusiness firms to survive in the medium term under these changing circumstances. However, there still remain opportunities for smaller firms and farms to exploit. This role could relate to product differentiation linked to products from region of origin, or organic products and other niche markets. The major route for continued survival would, however, be through exploiting other factors. One such factor is a reliance on external rather than internal economies of scale through networking or clustering and other forms of alliances. This could be among small firms or through establishing links between small firms or growers and larger enterprises that have already overcome the major barriers to market entry. These links are usually formalised through some form of contract similar to contract farming schemes implemented in the developing world.

Contract farming has over the years been considered as one system that has considerable potential for providing a way to integrate small-scale farmers in developing countries into export and processing markets and into the modern economy. In Africa, contract farming is believed to help farmers by providing new technology, ready markets and secured inputs and prices. Further, contract farming offers a mechanism that ensures self-sustained development (Glover, 1987; Weatherspoon et al, 2001). Contract farming has also been a component of the most successful income-generating projects for smallholders, as well as an important earner of foreign exchange in developing countries. This is despite strong criticism that contract farming is just another form of exploitation with limited equity impact, increasing socio-economic differences and evidence of some unsuccessful schemes and problems for many outgrowers exists (cf. Glover, 1987). In this article we argue that the changing nature of world agriculture provides a new set of reasons and objectives why contract farming could become an important institution for empowering poor small-scale farmers in developing countries, as well as a 'vehicle' for providing access to more lucrative markets. Other reasons for the renewed attention to contract farming are related to the many economic reforms in developing countries that have reduced public expenditure on credit programmes, staple crop price supports, input subsidies and government research and extension programmes (Key & Runsten, 1999).

The article starts by reviewing the changing nature of agriculture and why it has paved the way for a 're-emergence' of contract farming or contractual relations in developing country agriculture. In the developed countries, contracts have almost become a standard feature of agriculture. For a variety of reasons, as explained above, contract farming is now once more a feature in developing countries. The article also highlights the theoretical arguments for the introduction and growth of contract farming in developing countries since the early 1960s, and briefly summarises the experience with contract farming. In Section 5 we discuss the benefits and disadvantages for the various players of such contractual relations and, finally, the aspects of contractual relations that would require attention to ensure the success of future ventures between agribusiness

(private or state sponsored) and smaller growers are discussed. The article ends with some conclusions and recommendations.

2. INDUSTRIALISATION OF AGRICULTURE AND THE NEED FOR MORE VERTICAL COORDINATION

This section describes how the forces of change, i.e. globalisation, agricultural market reforms in developing countries plus the so-called 'industrialisation' of world agriculture, pave the way for an increased use of contract farming as one form of institutional organisation to bring about greater coordination in the agrifood supply chain. The industrialisation of agriculture in developing countries is often shaped by a different set of constraints and forces than those faced by the developed world, and as a result, one can see a diversity of institutional arrangements emerging in developing countries, different to those in developed countries. As a response to the industrialisation of agriculture, contracting arrangements are increasingly coordinating modern agricultural supply chains. The exact form of this governance structure, however, can vary widely according to situation-specific variables.

Accepting the diversity in the nature of the agricultural transformation process between countries, the concept of agricultural industrialisation describes the significant structural changes in the food and fibre system. It refers to the 'increasing consolidation of farms and vertical coordination (contracting and integration) among the stages of the food and fibre system' (C-FARE, 1994: 1). It also implies larger-scale production units linked to processors, distributors and retailers through formal or informal arrangements (Boehlje & Doering, 2000). Although the term is a nomenclature for a whole range of changes, two changes stand out (Drabenstott, 1995):

- A shift from food *commodities* to food *products*
- A shift from spot markets to more direct market channels, such as production contracts

Boehlje (2000) argues that the most dramatic changes in agriculture are taking place in terms of changes in the fundamental business proposition and the ways of doing business:

- The development of differentiated products.
- The implementation of biological manufacturing.
- The formation of food supply chains

The increased industrialised nature of agriculture in both developed and developing countries is largely the result of biological and information technologies (Schrader, 1986), economic growth, mechanisation, the increasing scale of organisation and the modernisation of production, processing and distribution systems (Sofranko et al, 2000). Drabenstott (1995: 14) argues that there are two powerful forces driving this process of industrialisation: a *new consumer* and a *new producer*. The new consumers are a highly demanding sort, while the new producers are equipped with new technology and management tools that enable them to engineer food from farm to table. Although this sounds like an ideal situation, traditional markets do not handle these circumstances well.

The new lifestyles of consumers in the wealthy countries of the north, shifting demographics and a growing appreciation for the link between diet and health have contributed to different eating patterns and influenced the foods consumers in these countries buy. The concern about food safety and the recent food scares also influence consumer behaviour heavily. The specific needs of consumers have led to the

splintering of the mass food market into a large number of niche markets. As a result, food companies have to market customised products, each aimed at a separate market niche (cf. Boehlje, 2000; Drabentstott, 1995; Davis & Langham, 1995). This argument also applies to developing countries as a result of increased urbanisation.

Present-day consumers are demanding much more than choice - they also want quality, consistency and value. Much of agriculture therefore has to shift from a philosophy from 'here's what we produce' to a situation where farmers take note of what the consumers want. New technology, which includes bio- and information technology, makes it possible to ensure that agricultural and food products do have the characteristics consumers want (Drabentstott, 1995; Boehlje, 2000).

Apart from the pressures from consumers and end-use markets, other major drivers of and contributors to these changes in agriculture include the following:

- Increasing competition from global market participants
- Economies of size and scope in production and distribution
- Risk mitigation and management strategies of buyers and suppliers
- Strategic positioning and market power/control strategies of individual businesses

Increased levels of processing, improved productivity, new technology and market forces have expanded the range of products (Von Braun & Kennedy, 1994; Royer, 1995) and food production has become an industrialised, capital-intensive business that operates in a highly competitive and unpredictable global market, is relatively inelastic and is faced with increased supply by competing countries (Huffman & Just, 1994; Meliczek, 2000). The result of these forces is that the industry has evolved to optimise efficiency and minimise transaction costs, and this has resulted in fewer larger farms, the concentration of farming, and specialisation (Schrader, 1986; Frank & Henderson, 1992; Rhodes, 1993; Ling & Liebrand, 1995; Pasour, 1998). Agriculture has therefore seen a move away from open market production and has become increasingly vertically coordinated with agribusiness in order to produce a greater range of high-quality differentiated products (Babb, 1992; Sporleder, 1992; Royer, 1995; Peterson & Wysocki, 1998; Pasour, 1998; Pritchett & Liu, 1998; Goodhue, 1999; Sofranko et al, 2000).

The need for increased coordination can also be attributed to the failure of traditional (spot) agricultural markets to deal with this new scenario. Usually, bulk commodities flow through commodity markets to food processors, which in turn market standardised products to consumers. Consumers now demand tailored foods and to ensure that they get them, food companies want more specific farm products. In addition, food safety is also a concern, especially regarding fresh food products, thus bringing about increased scrutiny and regulation in developed countries. As a result, processors and marketers have avoided traditional spot markets and have engaged in more direct market channels such as market and production contracts, full ownership or vertical integration.

Apart from the process of industrialisation, the increasing liberalisation in world agricultural markets, as well as the range of domestic market reforms in developing countries, has a non-desirable impact on small-scale producers worldwide. The liberalisation efforts, the harmonisation of standards and the encouragement of foreign direct investment might make it very difficult for small-scale producers to participate in new marketing opportunities presented under the reforms (Stanton, 2000). This stems from the typical problems of limited access to capital and technical assistance, and competitive buyers. Domestic market reforms in developing countries have boosted agricultural exports in general and provided opportunities for global and regional companies to invest in agribusiness in these countries. The rapid increase in multinational firms in the

agri-food sectors has also led to increased concentration in the downstream enterprises in the agri-food chain and contributed to significant changes in the organisation of the agri-food system.

The process of industrialisation has created opportunities for smallholders in developing countries to produce horticultural commodities under contract according to certain specifics (Kandiwa, 1999), but has the danger that small farmers will be marginalised and excluded from high-value markets (Reardon & Barrett, 2000). The challenge is therefore to prevent this from happening and to find ways to link small growers in developing countries to these high-value markets. The question remains whether an arrangement such as contract farming provides the solution to this challenge. This article suggests that contracting, modified to suit country-specific conditions, can be used as a vehicle to overcome transaction cost barriers, technology, competition, low prices, the inelasticity of demand and the inherent instability of agriculture, as suggested by Bonnen & Schweikhardt (1998). The danger exists that the intrinsic monopsonistic nature of large agribusiness (often multinationals) could result in the total marginalisation of many farming communities if the introduction of this 'new agriculture' and relationships in developing areas are not well managed.

3. THE EARLIER EXPERIENCE WITH CONTRACT FARMING

Contract farming, as an institution in agriculture, has a long history. Various forms of this institutional arrangement were employed by United States multinationals in Central America at the beginning of the 20th century, and by the Japanese to secure sugar production in Taiwan from 1885 (Runsten & Key, 1996; Rehber, 1998). In the period 1930-50, contracting was used increasingly in many food and fibre sectors. The fruit and vegetable canning sectors expanded in the United States and Europe (Little & Watts, 1994; Clapp, 1994) and merchants in Europe and North America entered into seed production contracts with growers in Australia, Britain, Canada, France, Holland, Hungary and the United States (Watts, 1994). From the late 1950s, Mexican growers increasingly supplied the American markets with fruit and vegetables under contract (Watts, 1994), and in the period 1960-80 there was a significant increase in contracting for vegetables, fruit, nuts and seed crops (Kilmer, 1986). By the late 20th century, contract farming was widespread across Western Europe, the United States and Japan (Rehber, 1998). Contract farming is now a common organisational structure in many developed countries.

Contract farming has also spread rapidly in Asia, Latin America and Africa owing to the higher returns earned by high-value export crops and the impact of new technologies (Clapp, 1994; Eicher & Staatz, 1998). Contract farming in Latin America has been extensively promoted since 1945 in a series of import substitution programmes, and has a much longer history than in Africa (Clapp, 1994; Little & Watts, 1994; Daddieh, 1994; Runsten & Key, 1996). In the period 1930-50, contracting expanded in the fruit and vegetable canning sectors of colonial Africa (Little & Watts, 1994) and was followed by a rapid increase in the period 1975-85, with some 60 schemes operating in 16 countries (Carney, 1988; Watts, 1994; Little, 1994; Eicher & Staatz, 1998). South Africa has a long history of farming under contract, which includes a wide range of sharecropping arrangements dating back to the early 20th century (Bundy, 1979). Vertical coordination arrangements currently exist in the tea, fruit, sugar, flower, cotton, vegetable, timber, fishing and tobacco sectors (Levin, 1988; Porter & Phillips-Howard, 1997; Van Rooyen, 1999; Karaan, 1999).

Contract farming often involves a great number of variations and multiple objectives,

which include welfare, political, social and economic criteria. Usually, this institution takes the form of a central processing or exporting unit purchasing harvests of independent farmers, but also includes multipartite, nucleus estate and informal models (Eaton & Shepherd, 2001). The terms of the purchase are arranged through contracts that vary from case to case but are usually signed at planting time. Often the agribusiness provides credit, inputs, farm machinery and technical advice to the farmers in exchange for the commodity they produce (Glover, 1994; Grosh, 1994; Eaton & Shepherd, 2001).

Contract farming can include a number of options in terms of how the contract between the producer and the integrator is structured, where some forms of contracting are dependent on specific institutions such as marketing orders, bargaining cooperatives and marketing cooperatives (Sporleder, 1992). The contract could specify the price, quantity, quality, the provision of agribusiness inputs, the provision of credit facilities, the conditions of production and the delivery and grading requirements (Sporleder, 1992; Runsten & Key, 1996). The price set in all these alternative arrangements could be a fixed price or a differential price (Sporleder, 1992). The various types of contract could include a marketing contract, a contract specifying some measure of company control, or a contract specifying the provision of company inputs, as well as full company control of production (Wolz & Kirsch, 1999):

- In the case of the marketing contract, sometimes called a market specification contract, the producer sells the raw commodity to the processor at a specified price, quality and time. In this type of contract, the producer has full autonomy regarding production decisions (Rehber, 1998).
- In the second type of contract, certain company resources could be supplied and there is a measure of company control. In this context, the producer agrees to produce the raw commodity under some degree of company control and specification, as well as to sell the commodity to the processor at an agreed price, quality and time (Rehber, 1998; Wolz & Kirsch, 1999).
- Finally, the third type of contract includes full company control as well as the provision of company inputs. In this regard, complete control of the production process passes to the integrator, who will supervise production, provide the necessary inputs and services and remunerate the producer for the raw commodity at an agreed price (Rehber, 1998; Wolz & Kirsch, 1999).

Furthermore, in certain cases of contracting, the structure of the contract is based on the farmer's access to key resources such as water (Morvaridi, 1995), while in others the producer does not even own the intermediate product, which remains the property of the agribusiness. In a contract such as these, the agribusiness uses the facilities and labour of the farmer, who is paid a fee to provide such facilities and services. This type of contract can ensure that the technology incorporated in the intermediate product supplied by the farmer is retained exclusively by the agribusiness (Martin, 1999; Goodhue, 1999). In addition, many contracts incorporate some credit arrangement (Wolz & Kirsch, 1999).

Given the poor performance of agriculture in many developing countries, especially in Africa, many donors and governments hoped that contract farming and its variants (outgrower schemes, nucleus estates, satellite farming) would bring about improved incentives, increased income for farmers and positive multiplier effects for impoverished rural economies. As a result, there was considerable growth in the number of contract farming schemes during the 1970s and 1980s. Most of these contract farming or outgrower schemes were multipartite arrangements involving private firms (often foreign), the government of the host country, non-governmental organisations, paras-

tatal bodies and international aid or lending agencies, such as the United States Agency for International Development, the World Bank and the Commonwealth Development Corporation (Glover, 1994; Little & Watts, 1994).

Contract farming in developing countries has experienced a mixed fortune, yielding some successes and many failures (cf. Little & Watts, 1994; Jaffee, 1994; Glover, 1984; Runsten & Key, 1996). Jaffee (1994), for example, talks of the 'rocky road of contract farming in Kenya'. Several studies (cf. Minot, 1986; Glover, 1984, 1987, 1994; Glover & Kusterer, 1990; Jaffee, 1994; Little & Watts, 1994; Porter & Phillips-Howard, 1997; Runsten & Key, 1996; Eaton & Shepherd, 2001) have analysed the nature and performance of contract farming schemes in developing countries. These studies contain useful reviews of the rich case study literature on contract farming schemes in the developing world. A large number of studies on contract farming also came from anthropologists, political economists, sociologists and geographers (Grosh, 1994). This literature is largely dominated by questions related to the dependency and world systems approach, and criticises contract farming as an institution leading to an increase in the marginalisation of farmers and communities that do not participate in contracting (Korovkin, 1992; Watts, 1994; Little, 1994). In this respect, it is argued that technological advances are passed on to the minority, resulting in uneven benefits that do not necessarily suit the needs of the developing country concerned (Meliczek, 2000). Furthermore, there is evidence of an increase in landlessness as a result of contract farming expanding land requirements (Little, 1994). In the African context, contract farming has been observed to disrupt power relations within farm households; to exploit an unequal power relationship with growers; and to lead to growers becoming overly dependent on their contracts (Key & Runsten, 1999).

The main lessons from the experience with contract farming emerging from the literature reveal a number of factors that determine the success of contract farming ventures. In general, it can be argued that the chances of success will be enhanced if the following measures are taken:

- The farmer partners should be properly screened.
- The country-specific historical and institutional legacies that have shaped local conditions should be taken into account in project design.
- Commodities requiring more labour-intensive production techniques should be selected. A crop that requires low levels of mechanisation and high labour inputs may not be suited to large producers, who could have the same labour and supervision problems as plantations. The production of a commodity that is delicate, highly perishable, involves a high level of labour inputs and a low level of mechanisation, and that needs a high degree of coordination, technology inputs and tight quality specificity is better suited to contract farming involving small farmers. (As discussed in Section 5, the danger still exists that agribusiness could prefer contract arrangements with large-scale farmers.)
- Crops displaying a high value per hectare, as well as requiring post-harvest facilities that are not feasible for the farmer, should be selected. Commodities with high transaction costs in marketing and processing and economies of scale higher in the marketing chain are the crops ideally suited for some form of vertical integration, such as contract farming.
- Mutual asset specificity between the contracting partners should be incorporated, thus raising the exit costs for both partners and ensuring a much more stable and sustainable relationship.
- The location and concentration of growers in relationship to the location of the agribusiness firm and other logistical factors should be optimised. If a competitive

local market is present, contracted farmers may choose to sell to the fresh market instead of the contracting firm, who is often unable to legally enforce contractual obligations. Serious disruption to input supplies to farmers can result in such a situation.

- The legal system should be well-developed, strong and respected, ensuring contract enforcement at minimal costs.
- Contractual relations should be well managed and based on mutual trust. The perceived high levels of contract manipulation by agribusiness firms, distrust by farmers of the contractual relationship, and a perception of loss of autonomy have characterised contract farming in developing countries. Removing all elements of mistrust and establishing trustworthy relationships are important measures for success.
- Farmer interests should be well represented in contract negotiations. In this respect, the formation of farmer cooperatives in a contract farming arrangement is seen as the most cost-effective way to represent the interests of the contracted farmer, as well as for the integrator to deliver inputs and services to the individual farms.
- Agribusiness should play a key role in coordinating farmers' access to a range of inputs, services and facilities. These could include promoting literacy, improving business skills, fostering farmer links with agribusiness and banks, establishing a facility for resolving conflicts, infrastructure development, etc.

4. A NEW INSTITUTIONAL PERSPECTIVE ON CONTRACT FARMING

This section uses the principles of the New Institutional Economics (NIE) to explain the rationale for contract farming as an institutional arrangement, and provides an additional motivation for the increased vertical integration discussed in Section 2. Contract farming, as viewed from an NIE perspective, can be seen as one of the governance forms in a vertical coordination continuum that can be utilised to effect the requirements of higher levels of managed coordination. Contract farming is an intermediate form of industrial organisation in agriculture, standing between spot markets and full vertical integration. At the one end of the continuum, we have spot market transactions, with coordination of the activities in the supply chain coordinated by the price mechanism. This form of industrial organisation is usually applicable when conditions approach that of the perfect market, i.e. many buyers and sellers, homogeneous goods, and goods that have little quality variation and are less perishable. At the other end of the continuum we have fully integrated operations, with one company controlling all stages of the market chain (Williamson, 1979; Barney & Ouchi, 1988; Peterson & Wysocki, 1998). Spot markets in general show deficiencies in transferring production information and marketing information regarding quality, timing and future demand, and in overcoming problems resulting from imperfect input markets. Firms consequently use contracts (including contract farming) to overcome these problems.

The NIE provides a useful theoretical framework for explaining the existence of and theoretical rationale for contract farming, as many of the problems of market failure and missing markets are typically caused by asymmetric information and a range of other factors that impact on transaction costs. A full set of reasons for market failure, in addition to the suggested optimal coordination form for each case, have been developed by a number of authors (cf. Minot, 1986; Grosh, 1994; Key & Runsten, 1999). Minot's (1986) application is illustrated in Table 1. A variant of this framework is provided by Key & Runsten (1999) and is summarised in Table 2.

Both the first and second part of Minot's table relate specifically to the characteristics of agricultural produce, namely perishability, quality and production variability in terms of

quantity and quality. Agricultural produce typically also varies in terms of moisture and sugar content, size, shape, colour, flavour, timing of delivery, and so forth. The issue is that consumers have particular preferences with respect to each of these characteristics and are prepared to pay premia for produce that has the desired qualities. Often, the problem with spot markets and the traditional price mechanism is that these preferences and characteristics are not well communicated through these markets (Key & Runsten, 1999; Grosh, 1994; Minot, 1986). When there is asymmetric information between the buyer and the seller regarding the quality of the product, product markets might break down all together - presenting a need for coordination through contracting. Analyses also refer to the need for information on production technology required for efficient production and optimum quality and the desired characteristics of the product. When markets for this type of information do not exist producers find it hard to adjust to the changing demands of consumers, which creates the need for forms of vertical coordination and integration. This section of Minot's table thus confirms in many ways why contract farming could exist in the context of the new developments in food and agricultural markets discussed in Section 2.

Table 1: Market failure and mechanisms of vertical coordination

Type of market failure and coordination problems that result	Circumstances under which failure occurs	Method by which institutions improve coordination	
		Contracting	Vertical integration
<p>Production information asymmetry: the buyer knows significantly more than the grower about the production technology</p> <p>1. Quality improvements could increase profitability for growers but growers lack technical expertise</p>	<p>The crop needs complex technology or is new to the grower</p> <p>Quality varies, affects demand, and is controllable</p>	<p>Management-providing contract that specifies practices to achieve quality, timing and least-cost production. The company recovers the cost of extension from the proceeds of marketing the product</p>	<p>Production information is transferred within the firm through the company communication system</p>
<p>2. Better timing of supply could raise profitability but the growers cannot change the timing</p>	<p>Timing of supply affects demand, and is controllable</p>		
<p>3. Improved practices would be profitable but the growers are not familiar with them Marketing information asymmetry: the buyer knows significantly more about markets than the grower, e.g. future, seasonal patterns, quality needs</p> <p>1. Quality improvements could increase profitability for growers</p>	<p>Improved practices exist and are known to the buyer The crop has a specialised or distant market and demand, and is relatively new</p> <p>Complex quality requirements, exists,</p>	<p>Market-specification contract, which allows</p>	<p>Market information is transferred within the</p>

but they are not aware of the premium on quality

2. Better timing of supply could raise profitability but the growers are not aware of timing requirements

3. Although greater production is profitable, the growers not sure of future prices

Imperfections exist in markets for credit, inputs and agricultural services. Transaction costs are high; growers are unsure of the profitability of inputs and services; lenders are unsure of the reliability of borrowers; policy-induced distortions reduce input and credit availability 1. Quality is suboptimal owing to limited use of inputs and services

2. Timing of supply is inappropriate or uncoordinated without inputs and services.

3. Output is suboptimal and there is excessive use of inputs and services

especially for exports

Perishable goods are supplied for processing or export

It is a volatile or new market; the grower does not trust the monopsonist

Use of large amounts of inputs, particularly specialised inputs, is profitable for the commodity

Crop for which quality depends on inputs

Crop for which timing depends on inputs

Crop for which input use reduces production costs

greater exchange of information regarding demand, quality, timing and price

Resource-providing contract supplying inputs and credit. Repayment is assured by the contract to market the product

integrated firm down to the field level

Credit and inputs are provided internally within the firm

Table 2: Influence of market failures on agribusiness organisational strategies

Market imperfections and transaction costs	Organisational strategy*
Imperfect credit market resulting in high costs of credit to growers - agribusiness acts as lender via the contract	CF/VI
Imperfect insurance market and high price risk - the firm acts as insurer via the forward contract	CF/VI
Imperfect insurance market and high yield risk - the firm is unable to insure due to moral hazard problems	VI
Imperfect market for production information - technology, timing	CF/VI
High labour supervision costs due to crop requirements	CF/SM
Imperfect market for specialised inputs (machinery, seeds, etc.)	CF/VI
Missing markets for family labour and land	CF/SM
Missing or thin local product markets	CF/VI

Notes: *CF = contract farming; VI = vertical integration; SM = spot market.

Source: Adapted from Key & Runsten (1999).

Another central part of the theory of contract farming refers specifically to the failures of the major factor markets, land, credit, inputs and services (reflected in the last section of Table 1). These market failures, especially the unavailability of production credit, limit the adoption of new crops and also restrict the access to inputs, technology and information that is necessary to produce a timely and good quality product. Many farmers are therefore unable to produce a particular commodity, without supply of credit and inputs by the agribusiness firm or estate.

Many of the commodities grown traditionally under contract farming in developing countries have long gestation periods requiring substantial capital investment. In the light of the failure of capital markets in developing economies, contract farming acts as an institution overcoming capital market failures - it is thus a form of interlocking factor market contract. The contracting firm supplies production material and inputs on credit and uses the future delivery of the crop as collateral. In this way many farmers have obtained the opportunity to produce something they would not have done otherwise. This relationship between producers and the firm can, however, be endangered if there are other opportunities for producers to sell their product. Owing to weak legal institutions not guaranteeing contract enforcement in many countries, chances of opportunistic behaviour of growers do exist, providing an important risk element to the contracting firm. However, Key & Runsten (1999) stress the point that agribusiness firms are often in a much better position to provide production loans to growers owing to the limited alternative markets and low monitoring, enforcement and other transaction costs.

One option to eliminate most of the problems discussed earlier is for agribusiness firms to opt for vertical integration whereby all stages of the marketing chain - from production to consumption - take place within one firm. However, due to typical problems in the labour market (shirking, supervision costs, etc.), vertical integration is seen as inferior to the contracting option. In commodities where labour input is fairly high, the plantation or vertical integrated models will clearly provide diseconomies of scale and inefficient outcomes, thus opening the way for small-scale family farms.

This is confirmed by the analysis of Delgado (1999), who applied a similar review of the specific factors in rural Africa most likely to be associated with transaction costs, and the way in which they shape the type of producer organisation most suited to dealing with them. His analysis provides an added dimension of the commodity characteristics to the theoretical explanation for the existence of contract farming and other forms of vertical integration. These include some of the aspects discussed in greater detail in Section 2. To a large extent, however, Delgado (1999) also confirms the points made by the other authors referenced in this section.

It is important to recognise that individual commodities have both production and marketing characteristics that will determine the most optimal form of production organisation for that specific commodity (Hobbs & Young, 1999). As shown earlier, high labour intensity favours smallholder organisation, whereas both economies of scale and heavy investment requirements in production produce the opposite effect. Delgado (1999) argues that most commodity-specific transaction costs arise in marketing and processing. Contract farming reduces the need for labour supervision while increasing the access of producers to needed inputs and skills. High perishability also tends to discourage independent small-scale operators, because of the high risks involved in not having an assured processor market.

A high value-to-weight ratio tends to be associated with greater risks in marketing and a more specialised clientele, leading to contractual or vertically integrated forms of organisation. Similarly, the absence of domestic markets for export items makes it risky to produce outside a marketing structure that can handle these items. Finally, items such as cut flowers and vegetables that are exported tend to be characterised by economies of scale in marketing, as are other perishables that require a cold chain for handling. Such economies of scale tend to lock out independent small operators (Delgado, 1999).

5. ADVANTAGES AND DISADVANTAGES OF CONTRACTING IN AGRICULTURE

5.1 Advantages to the producer

The enthusiasm of donors about the benefits of contracting in developing countries has resulted in inflated expectations of the potential of this institution (Little, 1994). Nevertheless, there are benefits to the farmer, as discussed below.

Contracting allows farmers to overcome the barriers of entry into crop- and animal-specific sectors, as explained earlier in Section 2. Farmers usually enter into contract production in order to reduce cost and gain access to information, technology, marketing channels, managerial skills, technical expertise, access to plant and equipment and patented production procedures (Carney, 1988; Rhodes, 1993; Glover, 1994; Clapp, 1994; Jackson & Cheater, 1994; Little, 1994; Royer, 1995; Pasour, 1998; Delgado, 1999; Vellema, 2000). Contracting could also improve access to capital and credit (Hudson, 2000). This is a major concern for most farmers and especially so in developing countries. Farmers are prepared to relinquish their autonomy for the sake of being able to produce.

Contracting farmers can reduce production costs and increase production and income as a result of their use of new technology and their access to company inputs (Watts, 1994; Clapp, 1994). The reduction in cost is due to better technology, better collective decisions and reduced transport and marketing costs (Hennessy, 1996; Pasour, 1998), cheap inputs from the integrator and, as a result of this, the ability to increase economies of scale (Royer, 1995), or technology developed by the integrator that can reduce cost (Pasour, 1998).

Contracting farmers can reduce marketing risk and stabilise income and, in this sense, the integrator provides a form of insurance (Featherstone & Sherrick, 1992; Watts, 1994; Jackson & Cheater, 1994; Runsten & Key, 1996; Wolz & Kirsch, 1999; Flaskerud & Klenow, 1999; Martin, 1999; Colchao, 1999; Sofranko et al, 2000). At the same time, contracts may simplify production and marketing decisions, thus improving the farmer's effectiveness (Hudson, 2000). The reduction of marketing risk through the demand assurance embodied in a contract is also appealing to farmers, especially those producing products for which the markets are thin.

Contracting farmers can increase profit opportunities through a greater product range and differentiated products (Pasour, 1998), or by diversifying out of traditional crops in developing countries in order to grow high-value crops and thereby increase their income (Williams, 1985; Levin, 1988; Korovkin, 1992; Glover, 1994; Von Braun & Immink, 1994; Kennedy, 1994; Delgado, 1999; Coulter et al, 1999). There is widespread evidence of an improvement in farmer income in developing countries as a result of contracting (Levin, 1988; Clapp, 1994), although the effect of an increase in production costs is sometimes not considered when evaluating the incidence of increased income (Little, 1994). In addition, the distribution impacts of this increased income is not assessed.

In conclusion, the educational experience of interacting with an agribusiness partner can provide a platform for farmers in developing countries who are attempting to convert from subsistence to commercial farming (Glover, 1984, 1994; Sofranko et al, 2000).

5.2 Disadvantages to producers

Most of the critique against contract farming schemes makes reference to the disadvantages to the farmers embedded in the contractual arrangements. These disadvantages include farmers' loss of autonomy, increased production risk, increased market power of agribusiness, increased concentration of production and, insuring instances reduced producer income.

There is a universal loss of autonomy as farmers operate under a centralised control system (Schrader, 1986; Currie & Ray, 1986; Levin, 1988; Korovkin, 1992; Morvaridi, 1995; Pasour, 1998; Rehber, 1998; Wolz & Kirsch, 1999; Colchao, 1999; Sofranko et al, 2000) and the contracted farmer is sometimes reduced to little more than a hired hand (Clapp, 1994). Conversely, it can be argued that the independent farmer who is heavily indebted has much the same status (Watts, 1994). It is also said that producers are disadvantaged by the high level of manipulation of the contract, in terms of both the legal and tacit arrangements (Glover, 1984, 1987; Porter & Phillips-Howard, 1997), and by the fact that contracting undermines traditional structures and support systems (Korovkin, 1992). Moreover, contracting is often associated with higher levels of family conflict (Watts, 1994).

A further source of criticism is related to increased production risk due to the need to meet the contractual obligations of the integrator (Royer, 1995). In this sense, risk can also increase in that the farmer invests in highly specific fixed production assets, combined with the non-assurance of a permanent contract or the chance that the integrator may default (Featherstone & Sherrick, 1992; Royer, 1995; Rehber, 1998). Production risk is increased especially when farmers in developing countries diversify out of traditional crops into non-traditional crops where the technology has not been developed locally (Runsten & Key, 1996).

Contracting universally increases land-use intensity and can lead to higher levels of pollution (Runsten & Key, 1996). Contract farming in developing countries can result in decreased food production and increased food security problems as a result of the concentration on contract crops (Glover, 1994; Clapp, 1994; Morvaridi, 1995; Rehber, 1998).

It is accepted that prices paid to the contractor will be less than spot market prices because of the reduction in marketing risk to the farmer and the increased market power of the contracting firm. The result of this is reduced income (Pasour, 1998). This situation might especially penalise a contracted farmer with high levels of capitalisation and managerial skills where an open market exists for the same crop (Runsten & Key, 1996; Rehber, 1998). Moreover, contract production often involves a high-cost package of inputs that require financing facilities. The change in cost structure is especially marked in developing countries when farmers diversify out of traditional crops, and can negate the effect of increased revenue (Von Braun & Immink, 1994; Little, 1994). Farmers incur additional cost because of the need to coordinate their production to suit the integrator, as well as to liaise for the use of company inputs and services (Glover, 1987).

5.3 Benefits to agribusiness firms

The benefits to the agribusiness firm from a contract-farming venture revolve mainly around cost reduction, quality control and reduced uncertainty with regard to the supply of raw material. Cost is reduced as a result of a more synchronised input-output processing function (Kilmer, 1986; Azzam, 1996) and the cost and financing of production are passed on to the farmer (Schrader, 1986) without the loss of control (Rhodes, 1993). The company can ensure that the quality of large volumes of the raw commodity is better controlled (King, 1992; Featherstone & Sherrick, 1992; Goodhue, 1999) and that the company's technology is adopted properly by the producer (Leathers, 1999). Further advantages to the company are the ability to reduce the cost of the raw commodity supplied by the contracted farmer through assuming the marketing risk of the farmer and thus reducing related farmer marketing and transport costs (Glover, 1984; Kumar, 1995). Owing to a relatively stronger bargaining position in the contractual arrangement, the agribusiness is also able to influence favourable farmer commodity prices (Delgado, 1999). Contracting thus removes the production risk to the farmer and eliminates the uncertainty of large volumes of input (raw material) supply (Levin, 1988; Korovkin, 1992). Because the quality of inputs is more consistent, the risk of dissatisfied consumers is reduced (Pasour, 1998; Rehber, 1998; Wolz & Kirsch, 1999).

Advantages that are specific to agribusiness firms in developing countries are the substantial political economy gains as a result of involvement in national development projects, or because the government is a party to the contracting arrangement (Hayami, 1990; Binswanger et al., 1993; Watts, 1994; Little, 1994), where this can translate into more tangible economic benefits resulting from government intervention or cheap credit (Clapp, 1994; Morvaridi, 1995). In conclusion, agribusiness firms in developing countries that are not allowed to own land can use contract farming with local farmers to overcome this constraint. This happened in many parts of Latin America where multinational agribusiness firms used contract farming to secure a constant flow of commodities for their processing and export ventures (Runsten & Key, 1996).

5.4 Disadvantages for agribusiness firms

A principal disadvantage frequently associated with contract farming in developing countries is the high level of transaction costs. Transaction costs are often excessive in projects involving large numbers of small farmers who are spatially dispersed, require high levels of inputs and support and who make smaller, more frequent deliveries to the agribusiness (Key & Runsten, 1999).

Excessive transaction costs are generated as a result of the structuring, administering and enforcing of the large number of contracts (Barry et al, 1992). Moreover, the integrator incurs additional supervision and monitoring costs in conjunction with the non-cost-effective delivery of services and inputs to farms that are small and spatially dispersed. In this regard, it is estimated that dealing with larger farmers, who make less use of inputs and deliver in greater volumes, results in lower levels of transaction cost. Coulter et al (1999) refers to an example of horticultural exporters in Zimbabwe who pay their smallholder suppliers 30 per cent of the price per kilogram paid to the large-scale farmers in order to break even. Contracting firms could easily (and usually do) prefer to deal with larger growers, which makes the relationship much more profitable but contributes to many smallholders being shut out from production.

Evidence is already emerging that agribusiness firms prefer to deal with larger farmers in order to reduce transaction costs and achieve greater consistency of quality and supply. In the United States, for example, contract farms are significantly bigger than non-contract farms (Sofranko et al, 2000) and, if the raw commodity offers economies of scale and is not labour intensive, large farmers have a production advantage (Glover, 1984; Runsten & Key, 1996). Further, larger producers who are located closer to highways have often been quicker to respond to contracting opportunities (Von Braun & Immink, 1994). Processors often prefer to deal with this type of producer because they are more geographically concentrated than small farmers and because of the reduced cost of procurement (Pasour, 1998). Large farmers, with higher levels of capitalisation and management skills, reduce the risk related to supply (Coulter et al, 1999) and have a better chance of success (Little & Watts, 1994). Larger farmers tend to be better educated and better able to adopt technology, are able to acquire specialised capital inputs more easily, require less inputs from the integrator and less monitoring, and the larger volumes supplied reduce the cost of interaction. Furthermore, agribusiness dealings with small farmers in developing countries have often resulted in increased cost per capita in respect of administration, services rendered, transportation and communication. Moreover, small farmers borrow more, require the use of specialised equipment more frequently, require more intensive monitoring and make more frequent deliveries of smaller quantities to the integrator, resulting in increased cost per unit of raw commodity supplied. In a situation where contracting is not legally enforceable, the costs of screening potential contract farmers is a function of the number of farmers screened and, in this respect, larger farms cost proportionally less (Runsten & Key, 1996).

This reality presents a great danger for small-scale farmers in developing countries, and may lead to their exclusion from contract opportunities. How this can be prevented is discussed in the next section.

6. CONTRACT FARMING IN DEVELOPING COUNTRIES: QUO VADIS?

The forces of globalisation and industrialisation in world agriculture have prompted new ways of organising the agri-food sector. At the end of the 1980s, the agricultural and food sector was characterised by firms operating highly autonomously. Nowadays, because of the need for a year-round supply, product assortment and developments in information technology, the agricultural sector is changing into a sector of international networks of firms (Overboom, 2000). Vertical coordination of food supply chains has gained a great deal of attention. Of particular concern is the effect of all these developments on the future of small-scale agriculture in developing countries. Reardon & Barrett (2000) show how these changes have caused small firms and farms to go out of business under the new competitive pressures. The new competitive environment leads to industrial concentration, with practices that result in the exclusion of domestic firms and small farmers from the benefits and rewards of the high-value markets.

The key issue is therefore to establish the types of institutions that can help ensure that the poor benefit from globalisation and industrialisation. For example, what is the role of cooperatives, contracting arrangements, market regulation and food and safety standards in facilitating smallholder farmers' access to expanding markets for higher-value products?

Contract farming has been implemented widely in developing countries as a means to reduce risk and ensure throughput volumes of known quality and price. In a similar fashion, in most countries there has been a rapid increase in the use of different forms of contract (market and production contracts) in agriculture as a way to ensure quality, coordination and desired product attributes. Many people see contracts as a means to reduce coordination costs within the food supply chain. Most of these contracts are with large national and multinational food corporations. As the dominance and market power of these firms often create an unfair playing field, people may question the appropriateness of contracts in ensuring that small farmers in developing countries are part of the 'new agriculture'.

The danger with most contract farming types is that it displaces decision-making authority from the farmer to the downstream processor or distributor, thus turning the farmers into quasi-employees. This happens when the contractor supplies all inputs as well as production guidelines and instructions, and then subtracts all these costs from the producer payment at the time of delivery.

Other problems relate to the high per unit costs of contracting with small-scale farmers, as discussed in Section 5.4. In addition, because these farmers are perceived to have greater problems in meeting stringent quality and safety requirements, agribusiness firms favour contracts with medium- to large-scale farmers (Key & Runsten, 1999). Add to this the problem of enforcing contracts in most developing countries due to poorly developed judicial systems. These factors could contribute to smallholders not being preferred as parties to contracting arrangements.

A review of the literature on agricultural contracts in general and contract farming in developing countries in particular, provides a good platform for assessing the future of contract farming in developing countries as one form of vertical organisation and coordination in agricultural supply chains. If we accept the premise that contract farming remains an important vehicle to keep small farmers involved in markets for high-value

crops and animal products, it is now important to take the lessons from the experience with contract farming and use them to improve the workings of this institution. With the evolution and increasing prevalence of vertical coordination in agriculture, the theoretical framework for evaluating these developments has also evolved. Several aspects of the New Institutional Economics, such as contract theory, agency relationships (principal agent problems, incomplete contracts), transaction costs and the boundaries of the firm, have become key focus areas (Barry et al, 1992). This theoretical framework is useful in analysing the relationships between the farmer (agent) and the agribusiness (the principal), where decisions about the extent of vertical coordination and related contract specifications can influence the financial position and performance of both parties. In the context of contract farming, this framework can be used to analyse and address the problems that could typically constrain or lead to the breakdown of contractual relations in developing country agriculture.

The problems and disadvantages of contract farming that could contribute to the exclusion of smallholders from contractual relationships, as discussed earlier, can be summarised as follows:

Enforcement of contracts

High transaction costs of dealing with many smallholders

Strict demands for consistency (no variation), quality, food safety, due diligence, etc.

Business attitudes and ethics referring to non-payment, delayed payments or even reduced payments

High rate of product rejection by agribusiness firms and traders (Kherallah, 2000)

Weak bargaining position of farmers vis-a-vis a limited number of traders (Kherallah, 2000)

Despite the vital role contract farming can play in providing services and market access to smallholders, these problems result in high costs and often undermine the viability and sustainability of contract farming in developing countries. The two main problems relate to contract default and enforcement and the scale of farming operations leading to high per unit transaction costs. Solutions to these various constraints could go a long way in improving the viability of contract farming. Possible solutions are discussed in some detail below.

6.1 Contract enforcement

Although contract farming involves a written agreement between farmers and the agribusiness firm or integrator, these contracts are seldom legally enforceable in practice (Grosh, 1994). The poorly developed legal institutions in developing countries contribute to high transaction costs in suing individual smallholders for contract breach. Enforcing a contract also leads to souring the relationship between the farmers and the firm, as well as between the agribusiness and the community. Adding to these high costs in terms of financial and community relations is the fact that in many countries the contracts are often viewed as legally unenforceable. Thus, the only real threat at the disposal of the contracting firm is to discontinue the contract with those farmers not complying with its terms and then to write off lost income. Because of these costs, firms deal only with growers who are less likely to default (often larger growers) and are required to screen applicants. These screening and enforcement costs are fixed costs and can be minimised by reducing the number of contract farmers, thus favouring larger growers (Key & Runsten, 1999).

Farmers sometimes break contract either on account of production failure or because they have sold the produce to competing buyers or to the local spot market. When there is a good market at harvest, many farmers are lured by higher spot prices where they can sell their produce for cash. In this way they avoid the repayment of credit, which is usually subtracted at the time of delivery. The farmer often claims production failure for the lack of compliance with the contract. The absence of effective legal systems and lack of collateral held by smallholders, as well as the weak insurance markets, create considerable risk for companies engaging in contract farming with smallholders (Coulter et al, 1999). Because of the risk of default, many agribusinesses or traders have discontinued the process of supplying inputs to farmers (Kherallah, 2000), again creating barriers preventing entry to agricultural markets by some smallholders.

How does one resolve the problem of farmer default? Agribusiness has developed a number of innovative mechanisms to deal with this problem, mainly in the case of high-value crops. These mechanisms, which are discussed in more detail in Coulter et al (1999), are the following:

- *Lending through groups.* Providing inputs and services through groups of smallholders reduces per unit transaction costs and risk of default.
- *Good communication and close monitoring.* This helps foster good company-farmer relations and a sense of trust, which can contribute to minimising strategic default.
- *Range and quality of services offered.* The better and broader the range of services offered, the closer the relationship between the farmer and business and the more the farmer stands to lose by breaking the relationship. Delivering timely services according to farmers' needs will foster trust and reduce the risk of default.
- *Incentives.* There should be incentives for repayment and strict management of defaulters.
- *Cooperation between buyers.* Agreements between agribusiness firms not to purchase from farmers under contract from other buyers, or through a joint operation of contract farming schemes, can also reduce the risk of default.

In the absence of public mechanisms for contract enforcement, private enforcement mechanisms can be of help. A study by Gow et al (2000) has shown that the use of internal private mechanisms for contract enforcement through contractual arrangements between two parties in an exchange can make contracts 'self-enforcing'. The introduction of contract innovations and associated support programmes in this case study induced output and productivity growth in both the agribusiness and the farmers. An input provision and investment facilitation programme was introduced for farms that signed long-term contracts with the company. The investment facilitation programme consisted of a guarantee at the state agricultural bank plus an interest rate subsidy. This investment ensured that the agribusiness was less likely to breach its part of the contract due to the increase of its costs of contract breach. At the same time, it reduced the costs for contract hold-up for these producers and contributed to increased investment in the particular commodity by the farmers. This programme therefore increased the private enforcement capital to the contract and improved incentives for the contracted farms to make contract-specific investments.

In other parts of the developing world, one finds that legal institutions do not play an important role in the enforcement of contracts. An analysis by Fafchamps & Minten (1999) suggests that trust-based relationships are the dominant contract enforcement

mechanism under these circumstances. Trust is established primarily through the repeated transactions of the contracted parties. Trust and social networks are usually the mechanisms by which transactions and contractual arrangements in developing countries are enforced and thus provide another alternative to be considered in reducing contract default. With many agribusiness firms controlled by multinational interests and often from a different ethnic group usually related to previous colonial regimes, one would expect that trustworthy relationships would be hard to come by. Striving towards establishing trustworthy relationships would, however, still be important.

6.2 High transaction costs

When agribusiness firms contract with a number of smallholders they incur high transaction costs, as shown in the discussion earlier. A greater number of producers means more trips to them by extension agents, more monitoring of pesticide violations, more deliveries of inputs and also more deliveries by smallholders. Smallholders are often dispersed and difficult to reach, which adds to the costs of service delivery and monitoring. Smallholders also require more inputs and capital from the firm per unit of production, as well as specialised machinery and much more extension assistance (Key & Runsten, 1999). Despite the inherent efficiency of small-scale farmers and the fact that it is sometimes politically attractive to deal with them, the high costs of supervision and other related per unit transaction costs are often prohibitive. Contracting firms therefore usually prefer to deal with larger growers, which makes the relationship much more profitable but tends to shut many smallholders out from production opportunities and markets.

Key & Runsten (1999) cite a case study in Mexico where a local frozen vegetable firm managed to engage in successful contracting with smallholders despite the inherent problems listed above. The company designed contracts that both parties found profitable. The firm offered resource-providing contracts that delivered credit, specialised inputs and extension advice. The credit to the farmers was advanced against no collateral in the form of seedlings, all pesticides and fertilisers. The value of these advances was equal to about 40 per cent of total production costs, with the farmers being responsible for land, labour and the costs of land preparation. The out-of-pocket costs for the farmers were thus in the same range as the costs for maize. In addition, the company introduced a management strategy that further reduced transaction costs. Participation by smallholders was restricted to a certain location and chemical control decisions were taken by an agronomist who visited growers once a week, carrying all material with him at all times. Farmers were responsible for obtaining their seedlings and fertilisers from the firm's ranches and for delivering their harvests. This strategy has reduced transaction costs tremendously, making the contract arrangement with the smallholders profitable.

One approach suggested by Coulter et al (1999) to counter the problem of high transaction costs of dealing with smallholders is to consider the promotion of farmer groups or farmer-controlled enterprises (commonly also referred to as cooperatives) in conjunction with a contract-farming venture. The cooperative could bargain and negotiate prices and the terms of the contract on behalf of the farmers. It can also be instrumental in providing information, inputs, technical and quality assistance to the growers. The agribusiness as such will have a stake in strengthening such institutions since it will contribute to considerably lower transaction costs. These cooperatives should be assisted by the agribusiness through training in literacy and numeracy and

also improving their ability to bargain effectively (despite this not being in the direct interest of the agribusiness). This would help the farmers' group or cooperative not to become excessively linkage dependent. Owing to the poor record of agricultural cooperatives in developing countries, it is important that such cooperatives be established on sound principles that will ensure their sustainability. The recent work by Cook & Chaddad (2000) provides an indication of the aspects that should be taken into account to ensure that cooperatives (or 'new generation cooperatives', as these authors call them) provide the necessary benefits to producers in any contractual or marketing arrangement.

Both Kherallah (2000) and Coulter et al (1999) use the activities of the Fresh Produce Exporters' Association of Kenya (FPEAK) as an example to illustrate the value of grass-roots activity in promoting linkages of smallholders with agribusiness (exporters). FPEAK supports small farmer groups through technical assistance and training, small grants to invest in infrastructure such as grading sheds and charcoal coolers, and loans to purchase inputs. It also provides services such as market intelligence and market promotion. The technical and financial support has made it possible for many farmers to meet the strict requirements and standards of the UK supermarkets - the largest buyers of Kenyan fresh produce. By assigning groups of farmers to different exporters it was now more profitable for exporters to contract with small-scale farmers (Kherallah, 2000). This organisation has thus addressed not only the issue of high transaction costs in dealing with smallholders, but also the problem of product quality and standards, which is a major concern for most traders.

Although the rapid growth of contract farming in the last couple of years can be ascribed to the importance of grades and standards in the fresh food industry, as established by multinational firms and consortia (Reardon & Barrett, 2000), the above discussion illustrates the difficulty in enforcing such measures when dealing with a large number of smallholders. Additional support from farmer or grass-roots organisations or the government will be needed to ensure that this does not lead to the exclusion of smallholders from contracting opportunities due to their non-compliance with food safety and quality standards.

Dorward et al (1998) list the conditions for successful interlocking contracts between smallholders and agribusiness, and in a certain sense they address all the problems related to contract farming raised at the beginning of this section. The conditions are the following:

- Increased competition among traders or firms to prevent monopsonistic control (this, however, creates opportunities for side-selling, leading to problems of contract enforcement)
- A guaranteed outlet for the final product
- An effective repayment mechanism through loan groups of farmers
- Access to market information by farmers to prevent exploitation and to strengthen bargaining power
- Volume of transactions that are large enough to reduce transaction costs (this can be achieved through farmer cooperatives or farmer groups)
- A well-established formal or informal network of traders to control rogue traders
- Little alternative sources of raw material to prevent the trader or agribusiness from buying from other farmers.

7. CONCLUSION

In view of the changing nature of world agriculture and food markets and the resulting need for vertical coordination along the agri-food supply chains, this article considers the role of contract farming as an institution to ensure the continued participation of small-scale producers in developing countries in the markets for high-value and animal products. The article first discusses the theoretical rationale for contract farming and illustrates how the New Institutional Economics can be used to show how contract farming as institutional arrangement overcomes input market failures and asymmetric information problems in the output market. Contract farming has been a feature of the agricultural sector in many developing countries since the 1960s and a large body of literature has documented the experience with contract farming. This article briefly reviews this literature and highlights the main problems normally associated with contract farming ventures, which lead to many failures and mistrust between agribusiness and smallholder families. These problems are:

- Poor enforcement of contracts
- High transaction costs in dealing with many smallholders
- Strict demands for consistency (no variation), quality, food safety, due diligence, etc.
- Business attitudes and ethics referring to non-payment, delayed payments or even reduced payments
- High rate of product rejection by agribusiness firms and traders
- Weak bargaining position of farmers vis-a-vis a limited number of traders

The two main problems relate to contract default and enforcement and the scale of farming operations leading to high per unit transaction costs, and are discussed at some length. Some solutions to these problems are provided and could go a long way in improving the viability of contract farming. However, it is suggested that much more research within the context of the New Institutional Economics framework is needed to study contractual relations in developing country agriculture, and to find appropriate solutions to prevent future failures of contracting ventures and further exclusion of smallholders from high-value markets. In this context, we are of the opinion that research into contract enforcement mechanisms, principle-agent problems, governance of supply chains and farmer cooperatives could provide valuable information to secure an important role for contract farming to link smallholders and the agribusiness firms in the high-value markets.

REFERENCES

- AZZAM, A, 1996. Testing the monopsony-inefficiency incentive for backward integration. *American Journal of Agricultural Economics*, 78(3): 585-91.
- BABB, EM, 1992. Management and financing and vertical co-ordination in agriculture: discussion. *American Journal of Agricultural Economics*, 74(5): 1238-40.
- BARNEY, JB & OUCHI, WG, 1988. *Organization economics*. San Francisco: Jossey-Bass.
- BARRY, PJ, SONKA, ST & LAJILI, K, 1992. Vertical co-ordination, financial structure, and the changing theory of the firm. *American Journal of Agricultural Economics*, 74(1): 1219-25.
- BINSWANGER, HP, DEININGER, K & FEDER, G, 1993. *Power, distortions, revolt and reform in agricultural land relations*. Discussion paper. Washington, DC: World Bank.
- BOEHLJE, M, 2000. *Critical dimensions of structural change*. Unpublished document, Department of Agricultural Economics. West Lafayette: Purdue University.
- BOEHLJE, M & DOERING, O, 2000. Farm policy in an industrialized agriculture. *Journal of Agribusiness* (Special Issue), 18(1): 53-60.
- BONNEN, JT & SCHWEIKHARDT, DB, 1998. The future of US agricultural policy: reflections on the disappearance of the farm problem. *Review of Agricultural Economics*, 20(1): 2-36.
- BUNDY, C, 1979. *The rise and fall of the South African peasantry*. London: Heinemann.
- CARNEY, JA, 1988. Struggles over crop rights and labour within contract farming households in a Gambian irrigated rice project. *Journal of Peasant Studies*, 15(3): 334-49.
- CLAPP, RA, 1994. The moral economy of the contract. In Little, PD & Watts, MJ (Eds), *Living under contract*. Madison, WI: University of Wisconsin Press.
- COLCHAO, S, 1999. Will AG banks prosper in age of vertical integration. *ABS Banking Journal*, 91(11): 26-31.
- COOK, ML & CHADDAD, F, 2000. Agroindustrialisation of the global agrifood economy: bridging development economics and agribusiness research. *Agricultural Economics*, 23: 207-18.
- COULTER, J, GOODLAND, A & TALLONTIRE, A, 1999. *Marrying farmer cooperation and contract farming: provision in a liberalising sub-Saharan Africa*. Overseas Development Institute, ISSN 1356-9338. Also available as 'Marrying farmer co-operation and contract farming for agricultural service provision in sub-Saharan Africa' at <http://www.worldbank.org/essd/essd.nsf/agroenterprise/marrying>
- COUNCIL ON FOOD, AGRICULTURE AND RESOURCE ECONOMICS (C-FARE), 1994. *Industrialisation of US agriculture: policy, research and education needs*. Washington, DC: C-FARE.
- CURRIE, K & RAY, L, 1986. On the class location of contract farmers in the Kenyan economy. *Economy and Society*, 15: 445-75.
- DADDIEH, CK, 1994. Contract farming and palm oil production in Cote d'Ivoire and Ghana. In Little, PD & Watts, MJ (Eds), *Living under contract*. Madison, WI: University of Wisconsin Press.
- DAVIS, CG & LANGHAM, MR, 1995. Agricultural industrialization and sustainable development: a global perspective. *Journal of Agricultural and Applied Economics*, 27(1): 21-34.
- DELGADO, C, 1999. Sources of growth in smallholder agriculture in sub-Saharan Africa: the role of vertical integration of smallholders with processors and marketers of high value-added items. *Agrekon* (Special Issue), 38: 165-89.

- DORWARD, A, KYDD, J & POULTON, C, 1998. *Smallholder cash crop production under market liberalization: a new institutional economics perspective*. Wallingford, UK: CAB International.
- DRABENSTOTT, M, 1995. Agricultural industrialization: implications for economic development and public policy. *Journal of Agricultural and Applied Economics*, 27(1): 13-20.
- EATON, C & SHEPHERD, AW, 2001. *Contract farming - partnerships for growth*. FAO Agricultural Services Bulletin No. 145. Rome: Food and Agriculture Organisation.
- EICHER, CK & STAATZ, JM, 1998. Agricultural transformation and rural economic development: introduction. In Eicher, CK & Staatz, JM (Eds), *International agricultural development*. Baltimore: Johns Hopkins University Press.
- FAFCHAMPS, M & MINTEN, B, 1999. *Property rights in a flea market economy*. MSSD Discussion Paper No. 27, March. Washington, DC: International Food Policy Research Institute.
- FEATHERSTONE, AM & SHERRICK, BJ, 1992. Financing vertically co-ordinated agricultural firms. *American Journal of Agricultural Economics*, 74(5): 1232-7.
- FLASKERUD, G & KLENOV, DJ, 1999. *Changing the way you farm: extension program - description and evaluation*. North Dakota University Extension Report No. 57, September. Available online at <http://www.ext.nodak.edu/extpubs/agecon/er/er57w.htm>
- FRANK, SD & HENDERSON, DR, 1992. Transaction costs as determinants of vertical co-ordination in the US food industries. *American Journal of Agricultural Economics*, 74(4): 941-50.
- GLOVER, D, 1984. Contract farming and smallholder outgrower schemes in less developed countries. *World Development*, 12(11): 1143-57.
- GLOVER, D, 1987. Increasing the benefits to smallholders from contract farming: problems for farmers' organisations and policy makers. *World Development*, 15(4): 441-8.
- GLOVER, D, 1994. Contract farming and commercialization of agriculture in developing countries. In Von Braun, J & Kennedy, E (Eds), *Agricultural commercialization, economic development and nutrition*. Baltimore, MD: Johns Hopkins University Press.
- GLOVER, D & KUSTERER, K, 1990. *Small farmers, big business: contract farming and rural development*. New York: St Martin's Press.
- GOODHUE, RE, 1999. Input control in agricultural production contracts. *American Journal of Agricultural Economics*, 81(3): 617-21.
- GOW, HR, STREETER, DH & SWINNEN, JFM, 2000. How private contract enforcement mechanisms can succeed where public institutions fail: the case of Juhocukor a.s. *Agricultural Economics* (Special Issue), 23: 253-67.
- GROSH, B, 1994. Contract farming in Africa: an application of the new institutional economics. *Journal of African Economies*, 3(2): 231-61.
- HAYAMI, Y, 1990. Assessment of the Green Revolution. In Eicher, C & Staatz, JM (Eds), *Agricultural development in the Third World*. Baltimore, MD: Johns Hopkins University Press.
- HENNESSY, DA, 1996. Information asymmetry as a reason for vertical integration. *American Journal of Agricultural Economics*, 78(40): 1034-44.
- HOBBS, JE & YOUNG, LM, 1999. *Increasing vertical linkages in agrifood supply chains: a conceptual model and some preliminary evidence*. Paper presented at the Canadian Agricultural Economics Society and the World Agricultural Economics Society, Fargo, North Dakota, 10-14 July.
- HUDSON, D, 2000. *Contracting in agriculture: a primer for leaders*. Research Report No. 2000-007. Department of Agricultural Economics. Mississippi: Mississippi State University.

HUFFMAN, W & JUST, RE, 1994. Funding, structure and management of public agriculture research in the United States. *American Journal of Agricultural Economics*, 76(4): 744-60.

JACKSON, JC & CHEATER, AP, 1994. Contract farming in Zimbabwe: case studies of sugar, tea and cotton. In Little, PD & Watts, MJ (Eds), *Living under contract*. Madison, WI: University of Wisconsin Press.

JAFFEE, SM, 1994. Contract farming in the shadow of competitive markets: the experience of Kenyan horticulture. In Little, PD & Watts, MJ (Eds), *Living under contract*. Madison, WI: University of Wisconsin Press.

KANDIWA, V, 1999. *Economic performance of smallholder farmers using alternative vertical coordination mechanisms for horticultural crops*. MS thesis, Department of Agricultural Economics. Cornell: Cornell University.

KARAAN, ASM, 1999. Bridging the small-big divide: a transaction cost approach to enterprise modelling for mussel mariculture in Saldanha Bay. *Agrekon*, 38(4): 680-92.

KENNEDY, E, 1994. Effects of sugarcane production in Southwestern Kenya on income and nutrition. In Von Braun, J & Kennedy, E (Eds), *Economic development and nutrition*. London: Johns Hopkins University Press.

KEY, N & RUNSTEN, D, 1999. Contract farming, smallholders, and rural development in Latin America: the organization of agroprocessing firms and the scale of outgrower production. *World Development*, 27(2): 381-401.

KHERALLAH, M, 2000. *Access of smallholder farmers to the fruits and vegetables market in Kenya*. Mimeograph, August. Washington, DC: International Food Policy Research Institute.

KILMER, RL, 1986. Vertical integration in agricultural and food marketing. *American Journal of Agricultural Economics*, 68(5): 1155-61.

KING, RP, 1992. Management and financing of vertical co-ordination in agriculture: an overview. *American Journal of Agricultural Economics*, 74(1): 1217-8.

KOROVKIN, T, 1992. Peasants, grapes and corporations: the growth of contract farming in a Chilean community. *Journal of Peasant Studies*, 19(2): 228-53.

KUMAR, K, 1995. Small farmers reap benefits from USAID agribusiness programs. *USAID Evaluation News*, 7(1): 3-4.

LEATHERS, HD, 1999. What is farming? Information, contracts and the organization of agricultural production: discussion. *American Journal of Agricultural Economics*, 81(3): 621-5.

LEVIN, R, 1988. Contract farming in Swaziland: peasant differentiation and the constraints of land tenure. *African Studies*, 47(2): 101-20.

LING, KC & LIEBRAND, CB, 1995. Vertical integration patterns of dairy co-ops reflect changing market. *Farmer Cooperatives*, 62(6): 1-8.

LITTLE, PD, 1994. Contract farming and the development question. In Little, PD & Watts, MJ (Eds), *Living under contract*. Madison, WI: University of Wisconsin Press.

LITTLE, PD & WATTS, MJ (Eds), 1994. *Living under contract*. Madison, WI: University of Wisconsin Press.

MARTIN, L, 1999. *Navigating production contract arrangements*. Staff Paper No. 99-10. East Lansing, MI: Michigan State University.

MELICZEK, H, 2000. *Food technology as a means of alleviating hunger and poverty*. Food and Agriculture Organisation, Rome. Available online at <http://www.uunuu.edu/unupress/food/8F072e/8F072E01.htm>

MINOT, NW, 1986. *Contract farming and its effect on small farmers in less developed countries*. MSU International Development Papers, Working Paper No. 31. Department of Agricultural Economics. East Lansing, MI: Michigan State University.

MORVARIDI, B, 1995. Contract farming and environmental risk: the case of Cyprus. *Journal of Peasant Studies*, 23(1): 30-45.

- OVERBOOM, M, 2000. Analysing governance structure of international supply chains. In Trienekens, JH & Zuurbier, PJP (Eds), *Chain management in agribusiness and the food industry*. Proceedings of the Fourth International Conference, Wageningen, 25-26 May. Wageningen: Wageningen Pers.
- PASOUR, EC, 1998. *The potential impact of increased vertical integration on North Carolina grain farmers*. North Carolina State University, December. Available online at <http://www.ncsoy.org/pasour2.htm>
- PETERSON, HC & WYSOCKI, A, 1998. *Strategic choice along the vertical coordination continuum*. Staff Paper No. 98-16, East Lansing, MI: Michigan State University.
- PORTER, G & PHILLIPS-HOWARD, K, 1997. Comparing contracts: an evaluation of contract farming schemes in Africa. *World Development*, 25: 227-38.
- PRITCHETT, JG & LIU, DJ, 1998. *Estimating backward integration in a primary input market: the case of the US hog industry*. Proceedings of the Sixth Joint Conference on Agriculture, Food and the Environment, Minneapolis, Minnesota, 31 August - 2 September.
- REARDON, T & BARRETT, CB, 2000. Agroindustrialization, globalization and international development: an overview of issues, patterns and determinants. *Agricultural Economics* (Special Issue), 23: 195-205.
- REHBER, E, 1998. *Vertical integration in agriculture and contract farming*. Regional Research Project No. NE-165: Private strategies, public policies, and food system performance. Department of Resource Economics. Amherst, MA: University of Massachusetts.
- RHODES, VJ, 1993. Industrialization of agriculture: discussion. *American Journal of Agricultural Economics*, 75(5): 1137-40.
- ROYER, JS, 1995. Potential for cooperative involvement in vertical coordination and value added activities. *Agribusiness*, 11(3): 473-81.

- RUNSTEN D & KEY, N, 1996. *Contract farming in developing countries: theoretical aspects and analysis of some Mexican cases*. Research Report No. 3, August 1996. Report prepared for the United Nations Economic Commission for Latin America and the Caribbean, Santiago, Chile.
- SCHRADER, LF, 1986. Responses to forces shaping agricultural marketing: contracting. *American Journal of Agricultural Economics*, 68(5): 1161-7.
- SOFRANKO, A, FRERICHS, R, SAMY, M & SWANSON, B, 2000. *Will farmers organize? Structural change and loss of control over production*. Available online at <http://web.aces.uuiuc.edu/value/research/organize.htm>
- SPORLEDER, TL, 1992. Managerial economics of vertically coordinated firms. *American Journal of Agricultural Economics*, 74: 1226-30.
- STANTON, JV, 2000. The role of agribusiness development: replacing the diminished role of the government in raising rural incomes. *Journal of Agribusiness*, 18(2): 173-87.
- UNNEVEHER, LJ, 2000. Food safety issues and fresh food product exports from LDCs. *Agricultural Economics*, 23: 231-40.
- VAN ROOYEN, J, 1999. *Agricultural partnership schemes as a mechanism for transformation and development*. Paper presented at the Third Regional Conference of the Initiative for Development and Equity in African Agriculture (IDEAA), Durban, 4 February.
- VON BRAUN, J & IMMINK, MDC, 1994. Non-traditional vegetable crops and food security among smallholders in Guatemala. In Von Braun, J & Kennedy, E (Eds), *Agricultural commercialisation, economic development and nutrition*. London: Johns Hopkins University Press.
- VON BRAUN, J & KENNEDY, E (Eds), 1994. *Agricultural commercialisation, economic development and nutrition*. London: Johns Hopkins University Press.
- VELLEMA, S, 2000. Technology and control in Philippine contract farming: the cases of asparagus production and maize seed production. *International Journal of the Sociology of Agriculture and Food*, 8(1): 25-34.
- WATTS, MJ, 1994. Life under contract: contract farming, agrarian restructuring, and flexible accumulation. In Little, PD & Watts, MJ (Eds), *Living under contract*. Madison, WI: University of Wisconsin Press.
- WEATHERSPOON, D, CACHO, J & CHRISTY, R, 2001. Linking globalization, economic growth and poverty: impacts of agribusiness strategies on sub-Saharan Africa. *American Journal of Agricultural Economics*, 83(3): 722-29.
- WILLIAMS, S, 1985. The Mumias Sugar Company: a nucleus estate in Kenya. In Williams, S (Ed.), *Agribusiness and the small-scale farmer*. Boulder, CO: Westview.
- WILLIAMSON, OE, 1979. Transaction cost economics: the governance of contractual relations. *The Journal of Law and Economics*, 22(2): 233-61.
- WOLZ, A & KIRSCH, OC, 1999. *Equitization of agribusiness in Vietnam: options for small-scale farmers with special emphasis on coffee production in Daklak Province*. Discussion Paper No. 69. Heidelberg, Germany: Research Centre for International Agrarian and Economic Development. Available online at <http://www.rzuser.uni-heidelberg.de/t08/diskus69.htm>