Contract Farming and Policy Options in Ethiopia
September 2012
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Cover Photo: AfricaJuiceTibila Share Company collecting passion fruit from farmers in out-growers schemes
Photo by Fintrac Inc.
Acronyms

ADLI  Agricultural Development Led Industrialization
ASE  Amhara Seed Enterprise
CDC  Commonwealth Development Corporation
CDI  Center for Development Initiative
CF  Contract Farming
CIAFS  Capacity to Improve Agriculture and Food Security
CQLIC  Coffee Quality Liquoring and Inspection Center
CRS  Catholic Relief Service
CSA  Central Statistical Agency of Ethiopia
CSR  Corporate Social Responsibility
CTA  Coffee and Tea Authority
ECMC  Ethiopian Coffee Marketing Corporation
ECX  Ethiopian Commodity Exchange
EIA  Ethiopian Investment Agency
ESE  Ethiopian Seed Enterprise
ETIDI  Ethiopian Textile Industry Development Institute
EUREGAP  European Standard for Good Agricultural Practices
FDI  Foreign Direct Investment
GDP  Gross Domestic Product
GIZ  Gesellschaft für Internationale Zusammenarbeit
GOPDC  Ghana Oil Palm Development Corporation
GTP  Growth and Transformation Plan
Ha  Hectare
ICCO  Interchurch Organization for Development Cooperation
IDA  International Development Association
IFPRI  International Food Policy Research Institute
KTDA  Kenya Tea Development Agency
MoA  Ministry of Agriculture
MoFED  Ministry of Finance and Economic Development
NBE  National Bank of Ethiopia
NGO  Non-Governmental Organization
OPEC  Organization of Petroleum Exporting Countries
OSE  Oromia Seed Enterprise
PASDEP  Plan for Accelerated and Sustained Development to End Poverty
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<th>Acronym</th>
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<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
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<tr>
<td>SDPRP</td>
<td>Sustainable Development and Poverty Reduction Program</td>
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<td>SNV</td>
<td>Netherlands Development Organization</td>
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<td>SQTC</td>
<td>Sesame Quality and Transaction Control</td>
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<td>SSE</td>
<td>Southern Seed Enterprise</td>
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<td>TCE</td>
<td>Transaction Costs Economics</td>
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<td>TNCs</td>
<td>Transnational Corporations</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>USD</td>
<td>United States Dollar</td>
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<td>USDA</td>
<td>United States Department of Agriculture</td>
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**Exchange Rate**

On August 31, 2012, the exchange rate was: \( 1 \text{ USD} = 17.9043 \text{ Birr} \)
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Executive Summary

The processes of globalization and market liberalization in many developing countries have resulted in the growing integration of global agricultural markets and major structural change in world agriculture. While these processes have expanded lucrative markets for high-value agricultural products, there is a growing concern that smallholder farmers could be marginalized from emerging market opportunities. Smallholder farmers already face a number of constraints such as lack of market information and access to credit, which limit their participation in the commercialization process and negatively impact their income. Moreover, major shifts such as the tendency for vertical coordination and the application of strict quality standards and food safety rules by developed countries could be additional barriers to the participation of smallholder farmers in the export market economy. These constraints are further compounded by market and institutional failures in developing countries.

Contract farming has been widely recognized by policymakers as a strategic approach with the potential to link smallholder farmers to commercial and export markets, thereby addressing one of the major challenges in the transformation of agriculture in developing countries. In contract farming, an agreement is made between farmers and agribusiness firms (processors, exporters, and traders) in advance for a specific quantity, quality, and date of delivery of an agricultural commodity at a predetermined price or price formula. Depending on the specifics of the arrangement, the agribusiness firm sometimes provides the farmer with technical assistance, farm inputs, and credit.

While contract farming has long been part of the agricultural production system in developed economies, it is increasingly used in developing countries as an institutional arrangement for facilitating the commercialization of smallholder farmers as a strategy that leads to income growth and poverty alleviation. Ethiopia’s Growth and Transformation Plan (GTP) 2010/11-2014/15, maintains agriculture as a major source of economic growth, intensifying commercialization and involving both smallholders and large private commercial farms. The plan acknowledges the increasing importance of contract farming (out-grower schemes) in linking smallholder farmers with high value markets, in the context of a fundamental shift to the production of high value crops.
Despite its potential, the experience of contract farming in Ethiopia has been very limited. This has consequently limited the capacity to frame appropriate policy and binding formal legislation that support contract farming arrangements. This is further compounded by lack of in-depth study to guide policy making. USAID-CIAFS initiated this study covering both the production and marketing aspects of contract farming with the aim of addressing this knowledge gap by developing a typology of contracts and providing guidelines under which contract farming could be developed and implemented to benefit both smallholders and commercial farms in Ethiopia.

The following value chains were selected for this study, based on their significance in terms of food security and incomes: coffee, sesame, maize, wheat, honey, milk, and beef fattening. Primary data were generated using a key informant survey involving a semi-structured questionnaire covering all critical issues of contract farming arrangements, administered to major actors (smallholder farmers, agribusiness firms, etc.) who have been engaged in contract farming arrangements in Ethiopia. Farmers’ cooperatives as well as NGOs that are actively involved in contract farming or related activities were also included in the survey. Secondary data were collected through selected farm visits and interviews with appropriate government departments.

In this study, two related theoretical approaches are used to explain the economic rationale for contract farming. First, from the perspective of Transaction Costs Economics (TCE), contract farming is considered as a coordination strategy to minimize production and transaction costs. In the second approach, New Institutional Economics, contract farming is considered as a strategy to circumvent the problems of market and institutional failures.

Contract farming models can be structured depending on the objectives and resources of the contractor, the type of product, the intensity of linkages between farmers and contracts, and the number of stakeholders involved in the arrangement. This study identifies and explains five possible contract farming models: Centralized, Nucleus Estate, Multipartite, Informal, and Intermediary. The study also outlines pricing and contract enforcement mechanisms; the major advantages and limitations of contract farming arrangements; and the basic preconditions or enabling environment necessary for successful contract farming arrangements between agribusiness firms and smallholder farmers.

2 USAID-CIAFS Contract Farming
The study then explains the patterns and significance of contract farming from global and regional perspectives, focusing on best practices identified based on a review of case studies from selected African countries. Contract farming has spread across many countries in Africa, Asia, and Latin America due to the agro-industrialization and globalization processes. The contributions of contract farming to employment and poverty reduction in developing countries, despite missed results in some cases, have garnered attention and praise from high-level organizations such as the World Bank and UNCTAD. The experience of many developing countries shows that contract farming provides strategic alternatives to FDI in terms of the participation of transactional corporations in agriculture, and the trends are on the increase.

While contract farming has a vital role to play in facilitating the commercialization of smallholder agriculture, it is not a panacea for all smallholder agricultural production and marketing problems nor is it appropriate for all types of commodities. Hence, it should not be imposed or highly promoted across all sectors. However, it does make economic sense commodities in certain markets.

This study has examined the experience of contract farming in Ethiopia based on case studies in selected value chains such as coffee, sesame, maize, wheat, haricot beans, cotton, passion fruit, honey, and beeffattening. Based on the results, the following recommendations for the public and private sectors have been drawn in order to promote the development of competitive and sustainable contract farming schemes that are beneficial to smallholder farmers:

- Provide legal permission for direct transaction between farmers and agribusiness firms for ECX mandated commodities through contract farming arrangements.

- Promote collective action. Contract farming schemes that are working with farmers' groups or cooperatives are more efficient than those contracting with individual farmers. In this case, the public sector can play an important role in the development of farmers' groups or cooperatives. However, it should be noted that the contract farming schemes should involve voluntary cooperative membership as well as voluntary contractual relations with agribusiness firms to ensure that they are sustainable.
• Promote Public-Private Partnerships (PPP) in research, extension, and investment ventures.

• Empower small-scale out-growers.

• Develop innovative private enforcement mechanisms that are based on contextual factors.

• The public and private sectors should work together to develop Grades and Standards for agricultural commodities that are not regulated by ECX.

• Create an enabling environment that includes investment and trade policies, contract legislation, provision of public goods such as roads or infrastructure, research, and other support services.

• Promote competition among agribusiness companies.

• Develop arbitration alternatives.
I. Background

The processes of globalization and market liberalization in many developing countries have resulted in the growing integration of global agricultural markets and major structural change in world agriculture (Eaton and Shepherd, 2001; Kirsten and Sartorius, 2002; Simmons, 2002; Da Silva, 2005). This scenario creates both potential opportunities as well as major challenges in the on-going effort to transform smallholder agriculture in developing countries. Above all, the processes have created new lucrative market opportunities for high-value agricultural products in expanding global markets. Yet, there is also a growing concern that smallholder farmers could be further marginalized from the emerging high-value markets. Major changes in the organization and performance of the global agricultural system such as the increasing vertical coordination of different stages along the agricultural value chain and the application of strict quality standards and food safety rules in developed countries could be barriers to the participation of smallholder farmers in the market economy (Kirsten and Sartorius, 2002; Da Silva, 2005). In addition, smallholder farmers face a number of constraints such as lack of information, finance, and risks that limit their participation in the commercialization process and negatively impact their income. Those constraints are associated with the apparent market and institutional failures in developing countries (Minot, 1986; da Silva 2005; Minot, 2011).

Therefore, linking smallholder farmers to the market economy remains one of the major development challenges in the transformation of smallholder farmers in developing countries. To help smallholders participate in the market and improve their income, a number of strategies have been implemented in the last decades. However, with the current globalization process, contract farming has emerged as one of the best approaches that promotes the commercialization of smallholder farmers in developing countries (Kirsten and Sartorius, 2002; Simmons, 2002; Da Silva, 2005; Minot, 2011). In contract farming, an agreement is made between farmers and agribusiness firms (processors, exporters, and traders) in advance for a specific quantity, quality, and date of delivery of an agricultural commodity at a predetermined price or fixed price formula (Binswanger et al., 1995; Eaton and Shepherd, 2001). The agribusiness firm provides the farmer with technical assistance, farm inputs, credit, and offers a guaranteed price while the firm receives a guaranteed steady supply of farm products in accordance with the contract terms.

USAID-CIAFS Contract Farming
While contract farming as an institutional arrangement has long been practiced in developed economies, it has resurged in recent decades as a strategic approach to promote the commercialization of smallholder agriculture and poverty alleviation in the developing world (Eaton and Shepherd, 2001; Da Silva, 2005; Setboonsarng, 2008; Minot, 2011). Available evidence shows that despite minor limitations, contract farming is widely recognized as an institutional arrangement for facilitating the integration of smallholder farmers into commercial agriculture that leads to income growth and poverty alleviation. Especially given the poor performance of agriculture in Africa, it is hoped that contract farming and its variants will bring about improved incentives, increased income for farmers, and positive multiplier effects for impoverished rural economies (Glover, 1994; Kirsten and Sartorius, 2002).

Given the similarity of the socioeconomic environment in Ethiopia with other developing countries, contract farming as an institutional arrangement could have significant economic implications in the transformation of smallholder agriculture into commercial farming. Ethiopian agriculture is principally characterized by smallholder farming that accounts for 85 percent of the total agricultural output. Commercialization of smallholder farming is very limited, accounting for only 21 percent of food grain production and seven percent of milk production (CSA, 2009). In addition, poverty is estimated at 30.4 percent in the rural areas, which is exceeding the 25.7 percent in urban areas (MoFED, 2012). Furthermore, nutrition and health indicators reveal the prevalence of significant food insecurity problems in the country.

Poverty reduction is the core objective of Ethiopian national development programs. Ethiopia started the liberalization process in 1992 with the implementation of a series of economic reform programs. The Agricultural Development Led Industrialization (ADLI) strategy, adopted in the mid-1990s established agriculture as an engine of economic growth. Since 2002, within the framework of ADLI, two national development plans were implemented and the third plan, called the Growth and Transformation Plan (GTP), is currently underway with the objective of attaining sustainable economic development. In the first two development plans, SDPRP (2002/03-2004/05) and PASDEP (2005/06-2009/10), which focused on agricultural growth via domestic and global trade, emphasis was placed on greater commercialization of smallholder agriculture and enhancing private sector development. The establishment of the Ethiopian Commodity Exchange (ECX) and the promotion of farmers' cooperatives were strategic tools to facilitate the commercialization process. During the last two planning periods, contract
farming was not emphasized or explicitly stated in the list of the development strategies. Like the two previous plans, GTP (2010/11-2014/15) still targets agriculture as a major source of economic growth, but focuses on intensifying commercialization through the involvement of smallholder farmers and large private commercial farms. In GTP, there is a fundamental shift to the production of high-value crops and the important role of contract farming schemes that link smallholder farmers to high-value markets.

Evidence shows that the experience of contract farming in Ethiopia is very limited (Nijhoff and Trienekens, not dated; Ayelech, 2010). This consequently limits the capacity to frame appropriate policy and legislation that support contract farming arrangements. This is compounded by lack of in-depth study to guide policy making. Very few localized studies have been conducted in Ethiopia (e.g. Nijhoff, 2010; and Ayelech, 2010). The few completed studies are explorative with limited scope. Considering this knowledge gap, USAID-CIAFS has initiated this analytical study covering both the production and marketing aspects of contract farming to develop a typology of contracts and provide guidelines under which contract farming can be implemented to benefit both smallholders and commercial farms.

2. Objectives

The purpose of this study is to investigate the existing contract farming agribusinesses and identify those critical factors that are impacting the success and sustainability of contract farming in Ethiopian smallholder agriculture for government, development partners, and stakeholders. The specific objectives include:

- Examine the status of contract farming activities in selected value chains;
- Identify critical factors that are directly impacting on the success and sustainability of contract farming;
- Assess the current legal framework and contract enforcement mechanisms in contract farming;
- Identify a workable model for successful contract farming with smallholder farmers.
3. Methodology and Sources of Information

This study is based on two sources of information:

1) Primary data was collected from key informant surveys using a semi-structured questionnaire.

A semi-structured survey covering all critical issues of contract farming arrangements was developed and employed in the fieldwork. The following value chains were identified based on their significance in terms of food security and incomes:

- Coffee
- Sesame
- Haricot beans
- Maize (seed)
- Wheat (seed)
- Honey
- Cotton
- Passion fruit
- Beef fattening

The key informant interview involved major actors (small farmers, agribusiness firms) along these value chains that have been engaged in contract farming arrangements with smallholder farmers. Farmers' organizations such as cooperatives, as well as NGOs, that are actively involved in contract farming or related activities, were also included in the survey.

2) Secondary data such as published and unpublished documents from relevant public and private offices, and review of literature.

The review of literature involved the following activities:

- Review of various models of contract farming from other developing countries, particularly in Africa;
• Analysis of different types of contracts operating under different arrangements;

• Analysis of how contract farming can reduce transaction costs and risks in agribusiness;

• Review legal systems, contract responsibilities and obligations, and enforcement mechanisms;

• Analysis of market information and pricing mechanisms; and

• Identification of possible contract farming models with a replicable potential.

Additional information was collected from select farm visits and interviews with appropriate government departments, such as Ministry of Agriculture.

4. Contract Farming Concepts

Contract farming is a concept that has been in existence for many years as a means of organizing the commercial production of industrial crops and perishable agricultural commodities in developed countries (Eaton and Shepherd, 2001; Da Silva, 2005). The principles of contract farming trace back to the early 19th century, when contracts were employed by the Japanese colonial state for sugar production in Taiwan after 1885 and by the USA banana companies in Central America in the early 20th century (Little and Watts, 1994). By the late 20th century, contract farming had become more important in the agricultural and food industries of developed and developing countries (Little and Watts, 1994; Rehber, 2000; Kirsten and Sartorius, 2002; Da Silva, 2005). Recently, contract farming became even more widespread.

The many definitions of contract farming in the literature make arriving at a meaningful description rather difficult. The most widely cited definition in the literature by Eaton and Shepherd refers to an agreement between farmers and agribusiness firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices (Eaton and Shepherd, 2001). In this arrangement the agribusiness firm provides production support in terms of input supply, technical assistance, and guaranteed market while the
farmers are committed to supply the specific commodity in the quantity and at the quality standards specified in the agreement.

There are also some more comprehensive definitions of contract farming. Contract farming refers to a contractual arrangement between farmers and other firms, whether oral or written, specifying one or more conditions of production and marketing of an agricultural product (Glover and Kusterer, 1990). Little and Watts (1994) have defined contract farming as a form of vertical coordination between agricultural producers and agribusiness firms that directly shapes production decisions through contractually specifying market obligations (by volume, value, quality, and, at times, advanced price determination); provides specific inputs; and exercises some control on the production process. Contracting is considered an intermediate mode of coordination, whereby the conditions of exchange are specifically set by farmers and agribusiness firms with some form of legally binding agreement (Da Silva, 2005). The specifications could be more or less detailed, covering provisions regarding production technology, price discovery, risk sharing, and other product and transaction attributes.

It is important to note that the preceding definitions of contract farming do not include simple contractual marketing arrangements or forward contracts in which typically only price, volume, and time of delivery are set with no stipulated intervention in the production process. In addition, other forms of simple contracts such as sharecropping and labor contracts are not part of contract farming. Contract farming is distinct from these simple contracts because it involves contractual relations between farmers and agribusiness firms that substitute for spot market transactions. Normally, a standard farming contract involves the specifications of provisions for price, production practices or technology, product quality, credit facilities, and risk sharing.

Finally, it is also worth noting that the terms contract farming and out-grower scheme are often used interchangeably in most of the literature. Yet, there are also cases where contract farming is directly related to a private sector contractual arrangement while out-grower schemes are contractual arrangements involving public and parastatal enterprises (Glover and Kusterer, 1990). The term out-grower scheme is frequently used in Africa and Asia. Out-grower schemes are commonly used in Africa in the form of centralized structures (Eaton and Shepherd, 2001).

1 They include agro-processing companies, exporters, or retailers at the end of the value chain
5. Conceptual Framework

In this section, two related theoretical approaches are used to explain the economic rationale for contract farming as a way of organizing agricultural production. In the first approach, contract farming is considered from the perspective of Transaction Costs Economics (TCE) as a coordination strategy to minimize production and transaction costs. In the second approach, contract farming is considered as an agricultural production strategy implemented to circumvent the problems of market and institutional failures.

5.1 Vertical Coordination and Transaction Costs

Vertical coordination has been defined as the alignment of direction and control across segments of the production and marketing system (King, 1992). The factors that are aligned and controlled include price, quantity, quality, and terms of exchange (Sporleder, 1992). Vertical coordination is conceptualized as a continuum with different coordination strategies ranging from spot/open markets to complete vertical integration (multiple marketing stages under single ownership) (Peterson and Wysocki, 1997). Figure 1 portrays the vertical coordination continuum. The tightening of vertical linkages is characterized by a movement from open markets to various forms of managed coordination such as contracting, strategic alliances, and single ownership of multiple market stages (vertical integration).

All agricultural markets involve some form of vertical coordination, i.e. matching of supply and demand between different participants along the marketing chain, such as farmers, processors, wholesalers, and retailers (Minot, 2007). While the problem of vertical coordination exists along all stages of the marketing chain, the focus in this case is limited to the relationship between farmers and the buyer of agricultural outputs. The literature identifies three types of vertical coordination strategies in the agricultural sector: spot markets, contracts, and vertical integration (Minot, 1986; Da Silva, 2005; Bijman, 2008). Contract farming is a form of vertical coordination that lies between spot markets and vertical integration.
Strategic Options for Vertical Coordination

Characteristics of "Invisible Hand" coordination
- Selfinterest
- Short-term Relationship
- Opportunism
- Limited Information Sharing
- Flexibility
- Independence

Characteristics of "Managed" coordination
- Mutual Interest
- Long-term Relationship
- Shared Benefits
- Open Information Sharing
- Stability
- Interdependence

External control via price and generic standards
External control via specifications and legal appeal
Mutual control
Internal control via decentralized decision structure
Internal control via centralized decision structure

Respective Primary Coordinating Mechanisms

Figure 1. The vertical coordination continuum

Source: Peterson and Wysocki, 1997
Spot or open markets are the simplest form of vertical coordination. In this case, transactions are coordinated by prices alone and there are no regular commitments between sellers and buyers. Spot markets typically govern most agricultural supply chains. Agricultural producers, particularly smallholder farmers, often sell their outputs in spot markets where coordination of transaction with respect to quantity, quality, and timing occurs only through prices. Spot markets function well for commodities that have little quality variation, are less perishable, have a short production cycle, do not require precise timing of supply, and have stable and known markets. In addition, spot markets are adequate for commodities for which credit, input supply, and technical assistance are less critical because of minimal input requirements and well-known production techniques (Minot, 1986).

However, spot markets do not always deliver the necessary degree of vertical coordination in terms of price, quantity, timing, and product attributes. Hence, a formal or an informal agreement is required among transaction partners. In this case, contract farming allows a higher level of coordination between farmers and agribusiness firms with regard to production management, time and location of product delivery, and product characteristics such as variety, color, and size (Minot, 2007). Contracting involves a legally enforceable and binding agreement with specifications regarding production technology, price discovery, risk sharing, and other product and transaction attributes (Eaton and Shepherd, 2001; Da Silva, 2005).

In contrast to other coordination strategies, the tightest form of vertical coordination is the vertical integration where a company owns and exercises full control of the agricultural supply chain. Instead of procuring farm products on the spot markets or making a contractual arrangement with a group of farmers, the company engages in production by establishing a plantation using purchased or leased farmland and hired labor. This coordination strategy enables the company to have a full control over the production process. Yet, it is not without limitations. For example, hired laborers are less motivated than independent farmers and demand closer supervision (Minot, 2007). In addition, it is more difficult and costly to adjust the level of output when the agribusiness firm produces on its own land (Eaton and Shepherd, 2001).

Important to note that, in reality, there are many forms of vertical coordination that do not clearly fit into the above three coordination
strategies (Minot, 2011). Cooperatives and producer organizations may play a major coordination role either as part of a contract farming scheme or in the context of spot markets. Government and non-governmental organizations or donor-funded projects sometimes serve as intermediaries to link farmers with agribusiness firms by providing technical assistance, establishing standards, and/or providing credit to farmers.

Having defined the major typologies of vertical coordination strategies and assuming that a firm is not limited to a single vertical coordination, what then would determine the choice of a particular governance structure? This leads to the theoretical explanation for the existence of contract farming.

The literature shows that the most widely applied theoretical framework for the contract farming rationale is based on Transaction Cost Economics (TCE), a branch of New Institutional Economics (Da Silva, 2005; Minot, 2007; Bijman, 2008; Catelo and Costales, 2008). TCE deals with the relations between buyers and sellers in terms of the costs of carrying out transactions, including finding a buyer, negotiating a price, delivering the commodity, and obtaining payment, as well as the risks associated with the transaction, including the risk of being cheated (Williamson, 2000). In TCE, transactions or economic exchanges are organized through governance structures that range from spot markets and contracts to hierarchies in the vertical coordination continuum. TCE matches transactions with the optimal governance structures that minimize transaction costs (Williamson, 1985). In this case, transaction parties opt for the most efficient governance structure that minimizes aggregate production and transaction costs.

Neoclassical economics assumes that economic actors have complete information and that transactions are costless. In contrast, the underlying principle of TCE is that every economic exchange involves transaction costs. It further contends that the existence of differential transaction costs greatly influences the choice of a particular governance structure and gives rise to the formation of different organizations (Williamson, 1995). Frequency, uncertainty, and asset specificity have been identified as the critical factors that give rise to transaction cost differential (ibid.). In addition, each generic mode of governance has structural differences in terms of cost and efficiency (Williamson, 1985).
Based on the concepts of TCE, the choice of an optimal governance structure for carrying out transactions between agricultural producers and agribusiness firms is greatly influenced by the size of transaction costs which in turn is determined by the behavior of economic actors and the characteristics of the transaction itself (Da Silva, 2005; Minot, 2007; Bijman, 2008; Minot, 2011). The behavior of economic actors is related to the notion of bounded rationality and opportunism while the attributes of transaction costs include uncertainty, frequency of exchange, and asset specificity.

Asset specificity refers to the extent to which an asset can be economically redeployed for alternative uses. The risks of opportunistic behavior are greater when the buyer or seller must make investments that are only useful for carrying out a transaction with the other party. For example, perennial crops like coffee have long gestation period – four to five years until the first harvest. In this case, once farmers have made the investment, their negotiating position is seriously weakened and the buyer may be tempted to lower the price, particularly if there are no other competitors in the market. As a result, farmers may not be willing to invest in such commodities, even if there is a price at which both farmers and agribusiness firms earn profits. The higher the degree of asset specificity, the greater will be the vulnerability of the partner who holds the asset to exploitative or opportunistic behavior from his counterparts. Hence, a high degree of asset specificity drives transactions away from spot markets, towards tighter alignments such as contracts and hierarchies in the supply chains.

Uncertainty in transactions is a critical issue for transaction partners. There are three major sources of uncertainty in transactions. First, the behavior of economic actors engaged in the exchange, which can be influenced by opportunism. For instance, reneging on previously agreed terms and distortion of information are some characteristics of opportunistic behavior that generate uncertainty. The second has to do with uncontrollable external factors, such as technological changes, acts of nature, or consumer preferences. The third source of uncertainty is the inability to control other transaction actors who may affect attributes such as product quality and timing of delivery. As the level of uncertainty increases, agribusiness firms have more incentive to seek control over the transactions, thus moving from spot markets to more vertically coordinated governance structures.
The frequency of exchange is closely associated with the incentive to engage in spot markets. When transactions are frequently performed, buyers and sellers tend to build confidence and engage in longer term business linkages, thus reducing opportunistic behavior. In the process of repeated transactions, information about buyers and sellers tends to be disseminated, reinforcing the motivation for continuing open market transactions. It is important to note that the concept frequency of transactions is completely different from the concept frequency of production. The latter refers to an internal operation related to production costs rather than transaction costs. Obviously, when a firm produces a certain type of product only sporadically, it will have little incentive to engage in close coordination with partners in the supply chain.

Bounded rationality refers to the observation that economic actors neither have the capacity to gather all the information and knowledge necessary for optimal decision-making nor the cognitive ability to process such information. Even if full information on current and future market demand, supply, quality, etc. is available, transaction partners could not have the time or the capacity to analyze it thoroughly. For smallholder farmers in developing countries, the problem of bounded rationality may be particularly serious, as they often have very limited technical knowledge. These farmers are not likely to enter into new production activities, even when they could benefit from it. The choice of governance structure cannot reduce bounded rationality, but it can reduce negative impacts. For example, in contract farming the provisions could include technical assistance to the producer about new technologies and management practices.

Opportunism refers to a situation where the buyer and seller can never fully trust each other, since each has some short-run incentive to misrepresent the truth and renege on the terms of their agreement. This situation creates the incentive to move transactions from spot markets to contracts where promises are reinforced with credible commitments.

Opportunism is a major problem for both farmers and agribusiness firms. To avoid the risk of opportunistic behavior, firms are often forced to physically inspect the quality and quantity of the product before purchase. The risks of opportunistic behavior are even greater when farmers or agribusiness firms must make certain investments that are only useful for carrying out a
transaction with the other party. For instance, if an agro-processing plant is designed to handle just one commodity, the processor will be tied up in that particular sector and depend on a continuous supply of the raw material. Thus, this could be an important incentive for processors to work with a large number of smaller holder farmers in a contractual arrangement.

5.2 Market and Institutional Failures
In this section, the theoretical rationale for contract farming focuses on market and institutional failures that are commonly observed in the agricultural sector in developing countries (Minnot, 1986; Key and Rusten, 1999; Kirsten and Sartorious, 2001). Here, the New Institutional Economics theory is also adopted and contract farming is viewed as an intermediate vertical coordination strategy standing between spot markets and full vertical integration. However, the major difference lies in the choice of optimum governance structure that addresses market failures and transaction characteristics.

Market failures are characterized by: 1) lack of production information; 2) lack of marketing information regarding quality, timing, and future demand; and 3) imperfection in inputs markets for credit, inputs, and agricultural support services (Minot, 1986). These failures contribute to increasing transaction costs and thus create incentives to increase coordination by contracting or full vertical integration.

Minot (1986) has developed a full set of reasons for market failures along with the suggested optimal coordination strategies for each case (Table 1). A variant of this framework is provided by Key and Runsten (1999) and is summarized in Table 2.

Market failures are common in agriculture, which is characterized by slow supply response, seasonality of supply, and efficient scales of production are often small. With the agricultural sector, market failures depend on the types of commodities and markets (Minot, 1986). As indicated in the second column of Table 1, market failure is more likely when 1) the production technology is complex or new to growers, 2) the commodity has a specialized, new, or distant market implying that the buyer must provide market information and sometime guarantee against monopsony abuse, and 3) when large amounts of
specialized inputs and credit are required to reduce cost or meet a specific demand.

Agricultural commodities are characterized by perishability and production variability in terms of quantity and quality. Quality parameters such as moisture and sugar content, size, shape, color, and flavor have critical implications in view of consumer preferences in different markets. In this case, the major limitation of the conventional price coordination mechanism via spot markets is that information on market preferred product characteristics is not well communicated (Minot, 1986; Key and Runsten, 1999). When there is asymmetric information between the buyer and the seller regarding the quality of the product, product markets might fail and give rise to the establishment of vertical coordination through contracting. In addition, when markets fail to deliver information on production technology required for efficient production with optimum quality, it is difficult for producers to synchronize their production with the dynamic demands of consumers, which necessitate the formation of contracts and vertical integration.

The other rationale for contract farming emanates from the failures of factor markets such as land, credit, inputs, and services (Table I). Factor market failures, particularly due to a lack of production credit, limits the adoption of new technologies and restricts the access to agricultural inputs and services required to produce a timely and good quality product. This problem limits the market participation of many smallholder farmers and necessitates the need for contracts.

An alternative option to overcome most of the problems of market failures is vertical integration whereby all stages of the marketing chain (production to consumption) are controlled by one agribusiness firm. Vertical integration in agriculture facilitates flow of production information, market information regarding demand (quality, timing, and future price), and the provision of financial and technical resources. However, vertical integration is considered inferior to the contracting option due to typical problems in the labor market (shirking, supervision costs, etc.). In commodities where labor 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 (Kirsten and Sartorious, 2001).
<table>
<thead>
<tr>
<th>Type of market failure and coordination problems which result</th>
<th>Circumstances under which failure occurs</th>
<th>Method by which institutions improve coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production information asymmetry: the buyer knows significantly more than the grower about the production technology</td>
<td>The crop has complex technology or is new to grower</td>
<td>Contracting</td>
</tr>
<tr>
<td>1) Quality improvements are profitable and yet growers lack technical expertise on quality management</td>
<td>Quality varies, affects demand, is controllable</td>
<td>Vertical integration</td>
</tr>
<tr>
<td>2) Better timing of supply could raise profitability but growers cannot change timing</td>
<td>Timing of supply affects demand, is controllable</td>
<td>Management-providing contract, which specifies practices to achieve quality, timing, and least cost production. The cost of extension recovered from product sales</td>
</tr>
<tr>
<td>3) Improved practices would be profitable but growers are not familiar with them</td>
<td>Improved practices exist and are known by buyer</td>
<td>Transfer of production information within the firm through training and supervision</td>
</tr>
<tr>
<td>Marketing information asymmetry: buyer knows significantly more about markets than growers, e.g. future, seasonal patterns, quality needs</td>
<td>The crop has specialized or distant market, demand is relatively new</td>
<td></td>
</tr>
<tr>
<td>1) Quality improvements are profitable but growers are not aware of premium on quality</td>
<td>Complex quality requirements, especially for exports</td>
<td>Market specification contract which allows greater exchange of information regarding demand: quality, timing, and price</td>
</tr>
<tr>
<td>2) Better timing could raise profitability but growers are not aware of timing requirements</td>
<td>Perishable goods are supplied for processing or export</td>
<td>Market information transferred within the integrated firm down to the field level.</td>
</tr>
<tr>
<td>3) Although greater production is profitable, grower not sure of future price</td>
<td>Volatile or new market, grower does not trust monopsonist</td>
<td></td>
</tr>
<tr>
<td>Imperfections in markets for credit, inputs, and agricultural services. High transaction costs, growers unsure of profitability of inputs and services, lenders unsure of reliability of borrowers, policy-induced distortions which reduce input and credit availability</td>
<td>Use of large amounts of inputs, particularly specialized inputs, is profitable for the commodity</td>
<td></td>
</tr>
<tr>
<td>1) Quality is sub-optimal due to limited use of inputs and services</td>
<td>Crop quality depends on inputs</td>
<td>Resource-providing contract supplying inputs and credit. Repayment assured by contract to market the product</td>
</tr>
<tr>
<td>2) Timing of supply is inappropriate or uncoordinated without inputs and services</td>
<td>Crop for which timing depends on inputs</td>
<td>Credit and inputs provided internally within the firm</td>
</tr>
<tr>
<td>3) Sub-optimal output and excessive cost due to limited use of inputs and services</td>
<td>Crop for which input use reduces production costs</td>
<td></td>
</tr>
</tbody>
</table>


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Table 2: Influence of market failures on agribusiness organizational strategies

<table>
<thead>
<tr>
<th>Market imperfections and transaction costs</th>
<th>Organizational Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperfect credit market resulting in high costs of credit to growers - agribusiness acts as lender via the contract CF/VI</td>
<td></td>
</tr>
<tr>
<td>Imperfect insurance market and high price risk – the firm acts as insurer via the forward contract CF/VI</td>
<td></td>
</tr>
<tr>
<td>Imperfect insurance market and high yield risk – the firm is unable to insure due to moral hazard problems VI</td>
<td></td>
</tr>
<tr>
<td>Imperfect market for production information – technology, timing CF/VI</td>
<td></td>
</tr>
<tr>
<td>High labor supervision costs due to crop requirements CF/SM</td>
<td></td>
</tr>
<tr>
<td>Imperfect market for specialized inputs (machinery, seeds, etc.) CF/VI</td>
<td></td>
</tr>
<tr>
<td>Missing markets for family labor and land CF/SM</td>
<td></td>
</tr>
<tr>
<td>Missing or thin local product markets CF/VI</td>
<td></td>
</tr>
</tbody>
</table>

Notes: CF= contract farming; VI= vertical integration; SM= spot market.
Source: Key and Runsten, 1999.

6. Contract Farming Models

Different contract farming models could be structured depending on the objectives and resources of the contractor, the type of product, the intensity of linkages between farmers and contracts, and the number of stakeholders involved in the arrangement. Accordingly, five contract farming models have been identified in the literature (Eaton and Shepherd, 2001). The decision of contractors to adopt a particular model depends on market demand, production, and processing capacity and the socioeconomic viability of plantation versus smallholder production (ibid.).

The centralized model

In the centralized model, a processing or exporting firm purchases produce from a large number of smallholder farmers. There is tight vertical coordination where quality is strictly controlled and farm production quotas are normally distributed at the beginning of the growing season. The centralized model is mostly associated with industrial crops such as tobacco, cotton, sugar cane, bananas, coffee, tea, cocoa and rubber, and yet it can also be used for poultry, pork, dairy, and fresh vegetables and fruits. Bijman (2008)
noted that to take advantage of economies of scale in processing, the contractors often opt for sourcing their supplies from large farmers who are capable of supplying a large volume of uniform products.

The nucleus estate model
The nucleus estate model is a variant of the centralized model but the contractor has its own estate plantation closely located to the processing plant. In this model, in addition to the production supply sourced from independent producers, the estate serves to provide guarantee of throughput for the processing plant and sometimes serves as a research site if its size is relatively small. While this model is mainly used for tree crops, there are also cases where other agricultural products that have been successfully managed within this framework. For example, dairy nucleus estates were established in Indonesia where the central estate has been used for the breeding of parent stock (Eaton and Shepherd, 2001).

The multipartite model
The multipartite model usually involves a variety of organizations. In this model, statutory bodies and private companies establish a joint venture for contracting with farmers. Multipartite contract farming may have separate organizations responsible for credit provision, production management, processing, and marketing. Following trade liberalization in the 1980s and 1990s, many governments in developing countries have actively invested in contract farming through joint ventures with private companies (Little and Watts, 1994). Multipartite structures are common in China where government departments as well as township committees have established joint ventures with local and foreign companies to enter contract-farming arrangements with village committees and individual farmers (Eaton and Shepherd, 2001). The involvement of a public partner in the joint venture could sometime negatively affect the farmer-contractor relationship if there is a conflict of political interest. (Bijman 2008)

The informal model
The informal model involves individual entrepreneurs or small companies who normally make simple, informal production contracts with farmers on a seasonal basis, particularly for crops such as fresh fruits and vegetables. Crops usually require only a minimal amount of processing in terms of simple grading and packaging. Support services are often restricted to the provision of seeds
and basic fertilizers, with technical advice limited to grading and quality control matters.

The success of informal initiatives depends on the availability of supporting services, which in most cases are likely to be provided by government agencies (Eaton and Shepherd, 2001). This is the transient and speculative of all contract-farming models, with a risk of default by both the contractor and farmers.

**The intermediary model**
The intermediary model involves transactions where the company subcontracts with intermediaries or middlemen/collectors who then informally contract with a number of farmers. This model is widely used throughout Southeast Asia. One of the major limitations of this model is that there is the danger of companies losing control over production and prices paid to farmers. In general, subcontracting disconnects the direct link between the contractor and farmers, which can result in lower income for the farmer, poorer quality standards, and irregular production.

7. **Typology of Agricultural Contracts**

The literature shows that the nature of contractual arrangements between farmers and contractors is enormously diverse and thus defies generalization. This diversity is a result of the technical requirements of production and the associated production and transaction costs (Simmons et al., 2005; Bijman, 2008). Yet, several typologies of contracts have been developed for comparison and evaluation purposes. The intensity of contractual arrangements varies according to the depth and complexity of the provisions in each of the following three areas (Minot, 1986; Eaton and Shepherd, 2001):

**Market specification contract**
In this arrangement, the transaction between farmers and contractors (agribusiness firms) is based on an agreement stipulating the product to be produced, quality attributes, and finally time and location of delivery. Such a contract is more applicable in a situation where there is a need for market coordination and yet farmers do not have any input constraint and the buyer is not concerned about production methods, other than product quality to be
measured at harvest. This type of contract may be informal or formal. Under this contract, the farmer retains full control of all management decisions so that he bears most of the production risk by his own. This is the most elementary type of contract arrangement and is commonly used by small firms under the informal model.

Resource-providing contract
In a resource-providing contract, the contractor arranges support provisions in the form of key farm inputs and technical assistance on credit basis in addition to the marketing arrangement. The cost of credit is often recovered upon the delivery of farm product. This type of contract is appropriate when the contractor has better access to credit and agricultural inputs that are needed for production than farmers do. This arrangement reduces transaction and input cost for the farmers while it provides an ensured supply in terms of volume and quality for the firm. Resource-providing contracts are more likely to be formal because of the need to specify the terms of the input credit.

Production-management contract
The production management contract is basically a combination of the market and resource specification formulas, except in this case the contractor also makes heavy commitments in the form of support provisions such as farm inputs advance, technical inputs, and managerial control. The production-management contract specifies the details of management practices to be followed, for example, planting date, fertilizer and field chemical application, and harvesting time. This type of contract is commonly used in cases where there is an introduction of a new crop technology and product quality and food safety are the primary motives. For instance, the contractor could specify the types and time of field chemical application to ensure that pesticide residue standards are met. In this arrangement, the contractor shares substantial portion of the management and market risks. Such contracts are mostly formal for they must specify the required management methods. This contract formula is widely used by the multipartite, centralized, and nucleus estate models.
8. Pricing Mechanisms

Pricing arrangements are the most critical and challenging components of all farming contracts. The use of transparent pricing structure contributes greatly to the success of contract farming by building farmers' confidence and goodwill. There are several kinds of pricing structures that are influenced by factors such as the target market (local or export), seasonality of production, and degree of market competition (Eaton and Shepherd, 2001). The following pricing mechanisms are commonly employed in contract farming arrangements (ibid.):

**Fixed prices**
With this widely used pricing mechanism, prices are fixed based on grade specifications at the beginning of each cropping season. In this case, agribusiness firms often use a cautious approach because of the risk of price fluctuations. Fixed price arrangements are advantageous to farmers because they reduce price risk. It is also an ideal arrangement for agribusiness firms for budgeting and marketing purposes. However, it could lead to contract breach when price fluctuation results in a big divergence from the fixed price. If the market price is higher, it may lead to side-selling, in which farmers violate the terms of the contract by selling some or all of their harvest on the market. Conversely, if the market price is lower, the firm may be tempted to purchase supplies from the market rather than the contracted farmers. The fixed price structure is commonly used by agro-processing companies.

**Flexible prices**
This pricing structure considers processing and other costs of the agribusiness firm as well as changes in local and global market prices. Prices to be paid to farmers are determined based on a formula which takes into account processing and other costs as well as global market prices over a particular period. Here, market information on world price and grades should be made available to farmers. This type of pricing arrangement is common for palm oil and sugar industries where the final prices paid to farmers are known only after the processed commodities have been sold.

Under the flexible pricing structure, there are also other price formulas where farmers and agribusiness firms share price increases and costs proportionately. For instance, pig contract farming in Philippines specified that farmers and the company divide the profits equally after deduction of the agreed expenses of
the company (Eaton and Shepherd, 2001). Such a profit-sharing arrangement could not be successful unless the firm is efficient and honest.

**Prices calculated on spot market values**
This pricing mechanism involves payment based on a percentage of spot market values which often includes a premium. This type of pricing mechanism is very complex and often leads to misunderstandings and disputes. In this case, a consensus has to be reached between farmers and firms on the premium price that needs to be paid for high quality contracted products. The limitation of such an arrangement is that farmers could face the risk of income instability and yet they are able to take full advantage of high market prices due to the percentage premium. It is worth noting that an independent arbitration mechanism should be developed to safeguard the interests of both the farmers and the sponsors whenever payments are dependent on fluctuating markets (Eaton and Shepherd, 2001).

**Split pricing**
In this pricing mechanism, the agribusiness firm makes two or more payments to farmers. The first payment is based on a fixed price determined before the cropping season, while the second payment varies depending on the sales price realized by the agribusiness firm. The second payment could involve a premium if the market price is higher than the first payment. This system is often used by processor-exporters in the case of cotton and other export crops (Minot, 2011).

**Prices on a consignment basis**
This pricing mechanism is another form of spot market pricing where prices are calculated after the produce has been marketed and sold. This form of payment is normally termed “on consignment”. Consignment pricing arrangements are rarely found in well-structured contract farming projects. In general, the growing tendency towards more vertical coordination strategies suggests that more and more agricultural products will be delivered at predetermined prices rather than on a consignment basis.
9. Contract Enforcement

In contract farming, agreements are often made between agribusiness firms and farmers, but there are also cases where an agreement is made between the firm and farmers' associations or cooperatives in the case of multipartite arrangements or between the firm and intermediaries who subsequently make their own arrangements with farmers. In contractual agreements, there are various formats of contracts that are commonly used in agriculture. In the literature, three different forms of contracts have been identified: formal agreements; simple registrations; and verbal agreements (Eaton and Shepherd, 2001).

**Formal agreements**
These are officially and legally endorsed contracts that clearly specify the details of conditions and obligations from each contracting party. They are commonly used in contract farming projects that involve heavy capital investment or in cases where an agribusiness firm leases a land to contracting farmers for crop production.

**Simple registrations**
This contract format is a simple agreement between farmers and an agribusiness firm where the former certified his full agreement to engage in contract farming by confirming with his signature. These agreements are not legally endorsed rather they are based on informal associations of trust and patronage. They are commonly used in most centralized models and to some extent in the informal model.

**Verbal agreements**
These contracts are oral or verbal agreements commonly used in the informal model and sometimes by large agribusiness firms. The major limitation of verbal agreements includes lack of clarity on responsibilities and specifications. Confusion and misinterpretation could occur by farmers, representatives of farmers' groups, and even the field technical staff of the agribusiness firm. In most cases, oral contracts are used in developing countries where there is a high illiteracy rate among the farmers (Eaton and Shepherd, 2001). Yet, the contract specifications should be documented for independent examination and copies should also be available to relevant public agencies.
Contractual agreements specify the responsibilities and obligations of contracting parties, as well as possible enforcement options in the case of contract breach. Farming contracts whether formal or informal should comply with the minimum legal requirements that apply in a particular country (Eaton and Shepherd, 2001). In addition, the prevailing local practices and social attitudes towards contractual obligations should be taken into account since they have an immediate impact on the outcome of the agreement. Local practices could also influence the specifications and formats (formal, simple registration, or informal) of contracts.

Enforceability is one of the critical factors influencing the success of contract farming arrangements. Agreements alone are not easily enforceable or legally binding. There is a need to have an efficient and effective legal system for contract enforcement. However, most developing countries lack the legal framework that supports the enforcement of contractual agreements. As a result, contracts are in most cases unenforceable and often operate based on traditional values and norms rather than legal agreements (Grosh, 1994; Eaton and Shepherd, 2001, Kirsten and Sartorius, 2002).

The threat of default is inevitable in cases where there are no legally binding contracts. Default may occur from both the farmers and the agribusiness firm due mainly to opportunistic behavior. Agribusiness firms suffer from the effects of contract default caused by the opportunistic behavior of farmers such as side-selling and input diversion (Eaton and Shepherd, 2001). Sometimes farmers breach their agreement by selling their output outside the contract for short-term incentives offered by other competitors or the spot market. Farmers could be tempted to engage in a side-selling activity and fail to repay farm inputs loan extended by the firm when alternative markets develop and competing buyers offer competitive prices (Coulter et al., 1999). Farmers could also slip into a default situation when they are tempted to use the agricultural inputs provided by the agribusiness firm for non-contracted crops. Studies reported that the risk of default has prompted agribusiness firms to discontinue the provision of inputs credit to farmers (Kirsten and Sartorius, 2002). This situation creates a hurdle for the commercialization of smallholder farmers. Agribusiness firms could breach their agreements by rejecting outputs under the pretext of substandard quality or by not providing farm inputs on time. However, it has been argued that a competitive output market may serve
as an incentive to agribusiness firms to honor their contracts (Coulter et al, 1999).

Though enforceability is a critical success factor for contractual agreements, the literature also unveiled that in most cases it is very unlikely that an agribusiness firm will take legal action against smallholder farmers for contract breach (Eaton and Shepherd, 2001; Kirsten and Sartorius, 2002). First, the enforcement costs via the court or legal system tend to be far in excess of the amount claimed. Second, the legal action consequently strains the relationship between the agribusiness firm and the farmers or the community as a whole. Furthermore, in many developing countries, contracts are often perceived as legally unenforceable. As a result, agribusiness firms instead tend to discontinue their contracts with those defaulters and look for farmers who are less likely to default, in most cases favoring larger farmers.

Eaton and Shepherd (2001) note that agreements should include dispute resolution mechanisms since it is unlikely that both contracting parties would pursue legal action through courts. There are different mechanisms to mitigate the opportunistic behaviors of contracting parties. An independent third party representing the agribusiness firm, farmers, farmers’ groups/organizations, NGOs and other interested parties could be established as a dispute mitigating mechanism, while in other cases a government agency might be the most appropriate forum. The third party can act as an arbiter for possible defaults or other deviations from the contract. However, it is recommended that the contract farming industry have a self-enforcing mechanism in order to offer a measure of protection for all participants.

To overcome the major limitations of court-based contract enforcement, the private sector (agribusiness firms) has developed a number of innovative mechanisms to deal with the problem of farmers’ default that are briefly outlined below (Coulter, et al., 1999):

Groups-based lending
Provision of inputs and other services through groups of smallholders reduces unit transaction costs and default risk. In this case, the group takes joint responsibility for input loans. In addition, a group contract is an effective way to deliver the necessary inputs, service, and better management.
Good communication and close monitoring
This approach enables good agribusiness-farmers relationships and establishes a sense of trust that consequently minimizes the risk of strategic default.

Range and quality of services offered
The provision of broad-range and better support services enables long-term relationships between farmers and the agribusiness firm. Delivering timely services according to farmers' needs fosters trust and reduces the risk of default.

Incentives for repayment and strict management of defaulters
These steps help to minimize default. Penalties for defaulters may include exclusion from a contract or publishing their names locally.

Cooperation between buyers
The risk of default could be minimized by agreements between agribusiness firms not to purchase from farmers under contract with other buyers or by operating a joint contract farming schemes.

10. Advantages and Limitations of Contract Farming

10.1 Advantages for Farmers
Smallholder farmers may enter contract farming to reduce the risks and transaction costs associated with agricultural production and marketing. In general, contract farming has the following potential advantages for farmers (Eaton and Shepherd, 2001; Kirsten and Sartorius, 2002; Simmons, 2002; Da Silva, 2005):

Improved access to farm inputs and support services
Most contract farming arrangements involve the provision of basic farm inputs (such as improved seeds, fertilizers, and farm implements) as well as production support services. The agribusiness firm, depending on the level of its commitment, could extend support services to include mechanized land preparation, field cultivation, harvesting, and threshing, as well as free training and extension services. The main purpose of this provision by the agribusiness
firm is to ensure that proper crop management practices are followed to achieve targeted quantity and quality of production.

**Enhanced access to credit**
The majority of smallholder farmers in most developing countries lack access to credit for financing agricultural inputs. However, farmers can have more access to farm inputs loans under provisions specified in contractual agreements. Most often credit for working capital is extended in the form of farm inputs by the agribusiness firm. In other cases, with the firm serving as a guarantor, commercial banks or government agencies may provide credit for investment capital such as machinery and buildings. Here, the banking system accepts the contractual commitment between farmers and the agribusiness firm as collateral.

Despite this advantage for farmers, the growing concern that some farmers abuse credit arrangements by side-selling (extra-contractual marketing) and input diversion has prompted some firms to limit the provision only to seeds and essential agrochemicals (Eaton and Shepherd, 2001).

**Introduction of new technology**
The growing competition in global agricultural markets requires new technologies that increase productivity as well as enhance the quality of commodities. And yet, smallholder farmers are often reluctant to adopt new technologies and divert from traditional staple crops due to the possible risks and costs involved. They are more likely to adopt new technologies when they have access to technical support and the necessary technological inputs. In contract farming, the agribusiness firms are often efficient and effective in the introduction of new technologies to smallholder farmers since they have a vested interest in promoting the production of high-value agricultural commodities. This process promotes smallholder farmers from subsistence to commercial farming.

**Skill transfer**
The provision of technical assistance by agribusiness firms enhances the management skill of smallholder farmers. Improved management skills may include farm record keeping, adoption of modern agronomic practices such as application of fertilizers and other agrochemicals, and increasing awareness and knowledge of export markets' demand and quality requirements. Farmers will
also adopt the appropriate timing of field activities as recommended by the firm's extension service. Contract farming also has positive spillover effects in the agricultural system. Farmers can apply the new management skills acquired through contract farming to other non-contracted crops and livestock activities. Other spillover effects include investment in market infrastructure and human capital, and hence improving the productivity of other agricultural sectors.

**Minimum price risk**
Agricultural prices are often characterized by seasonal and spatial variability which have an immediate impact on farm income. In addition, in most cases smallholder farmers have little access to market information and weak negotiation power as compared to buyers in open markets. This situation poses considerable price risk that could be overcome by contractual arrangements. In contract farming, the agribusiness firm indicates in advance the prices to be paid at product delivery and these predetermined prices are often specified in the agreement at the beginning of the cropping season. Agribusiness firms typically purchase farm products that meet the specified quality and quantity requirements while farmers are relieved from the risk of price fluctuation.

There are also contracts related to the market prices at the time of delivery rather than based on fixed prices. Prices are based on an agreed upon formula relating to uncertain future prices prevailing in local and global markets. In this case, farmers are highly vulnerable to price volatility and thus these agreements are not the norm.

**Market access**
One of the major constraints hindering the productivity of smallholder farmers in most developing countries is the lack of secured market outlets with fair prices. There are considerable risks and transaction costs involved in the open markets. Farmers need to search for and negotiate with potential buyers. Hence, they will not shift into the production of new commodities unless there is a dependable market outlet, while the agribusiness firms do not invest in ventures unless they are assured that the required commodities can be persistently supplied. In this case, contract farming offers a potential solution by providing secured markets to farmers and assured supply to agribusiness firms. With contract farming arrangements, farmers may have a market linkage
with distant markets where the demand for and price of crops are often more favorable.

10.2 Major Limitations to Farmers

Despite the range of potential advantages for farmers, contract farming is not without criticism. The argument against contract farming cites the disadvantages for farmers that are embedded in contractual arrangements. The major disadvantages include farmers' loss of autonomy, increased production risk, increased market power of agribusiness, increased concentration of production, and insuring instances of reduced producer income (Kirsten and Sartorius, 2002). Most of the negative effects of contract farming result from the fact that the relationship between individual farmers and the agribusiness firm is uneven, the latter often in a position to exercise power and non-competitive conduct when defining terms of the transactions (Da Silva, 2005). The potential disadvantages are:

1. There is a high risk of contractual holdups by agribusiness firms in the absence of effective enforcement mechanisms. Firms might renege on contractual terms if market conditions change or if conditions for opportunistic behavior occur. If current market prices show significant variation from the fixed prices specified in the contracts, i.e. much below the contracted price, contractors may engage in renegotiation or contractual holdup. A hidden form of contractual holdup involves the rejection of commodities delivered under the pretext of non-conformity to quality standards. In this case, there is a high risk that the financial losses arising from unexpected market conditions could be transferred to farmers.

2. Under conditions of rapidly changing product markets, contractors may influence prices paid to farmers by setting the delivery schedules to benefit from the market volatility. This problem could also happen due to asset specificity related to timing of product delivery.

3. Agribusiness firms might intentionally avoid transparency in the price determination mechanism by using complex formulas related to quantity and quality parameters that require, for instance, laboratory measurement. In this case, it is very difficult for farmers to assess whether they have
received a proper remuneration since the approaches are vulnerable to fraud and manipulation.

4. Lack of flexibility in enterprise choice. Since the contractual agreement limits farmers to the production of contracted commodities, they cannot adjust production to benefit from market opportunities.

5. High risk of indebtedness. Despite being a solution to credit constraint, open access to credit facilities may lead to heavy indebtedness. Farmers may be tempted to borrow to finance consumption and other non-commercial needs.

6. A growing dependence on the contracting agribusiness firm for non-farm related matters erodes the bargaining position of farmers and enhances monopsonic conduct of the firm. Firms might become a last resort benefactor in areas where public services are weak or non-existent. Firms may provide some social services and do small favors to farmers, such as the provision of free transportation.

7. While contract farming is mainly meant for risk reduction in production and marketing, there are cases where those risks are increased. Production risk is increased especially when smallholder farmers are shifted from traditional crops to non-traditional crops requiring technology that has not been developed locally (Kirsten and Sartorius, 2002). For instance, production risk is more likely when the agribusiness firm introduces a new crop to the area without adequate adaptation trials or field tests. Yields could be much lower than expected. Market risks may also occur when the company's forecasts of market size or price levels are not accurate. The problem could become critical if the firm is unwilling to share any of the risk, even if partly responsible for the losses.

8. Manipulation of quotas and quality specifications. Sometimes, there are cases where actual production far exceeds original targets. This situation could occur due to the agribusiness firm's management problems, such as failure to measure actual field size during planting and unrealistic market expectations, or the market may collapse unexpectedly. In such situations, firms may be tempted to reduce farmers' quotas and manipulate quality standards to reduce purchases, while appearing to honor the contract.
There is a risk of monopsony control. The monopoly of an agricultural commodity by a single firm can have a negative impact on farmers engaged in the contract. In such cases, contract farming has been criticized for the exploitative effects of monopsony control, whereby farmers are tied to a single buyer (Grosh, 1994). The effects of monopsony control are critical when there is the problem of asset specificity in farmers’ investment, i.e., when farmers are locked into a sizeable long-term investment in perennial crops and cannot easily change to other alternative crops. It is argued that the government should have some role in determining the prices to protect farmers when there is only a single buyer for one commodity (Eaton and Shepherd, 2001). On the other hand, large-scale investments by agribusiness firms, such as nucleus estate models, often require a monopoly in order to be viable.

10.3 Advantages for Agribusiness Firms

The major advantages for agribusiness firms to engage in contract farming are mainly related to reduction of costs, quality control, and reduced uncertainty with regard to product supply (Eaton and Shepherd, 2001; Kirsten and Sartorius, 2002; Da Silva, 2005). Agribusiness firms may purchase farm output supplies for their processing and marketing activities with several alternative options. Thus, the benefits of contract farming for the agribusiness firm are best examined in comparison with other alternatives, i.e. spot market purchases and large-scale estate models (vertical integration). Some of the major potential advantages for agribusiness firms include the following:

Land constraints are circumvented

Nowadays, the establishment of large-scale plantation agriculture is becoming less likely due to scarcity of land in most developing countries as opposed to the colonial era. Most large tracts of arable land are now either traditionally owned, very expensive to purchase, or unavailable for commercial development; access to large tracts of land may also be precluded by legislation that caps farm sizes or excludes private companies from land ownership (Eaton and Shepherd, 2001; Kirsten and Sartorius, 2002; Da Silva, 2005). Thus, contract farming enables agribusiness firms to circumvent these limitations. Contract farming with smallholder farmers offers an opportunity to have access to farmland that would not otherwise be available, with the additional advantage that the firm does not have to purchase it. This phenomenon has
happened in most Latin American countries where multinational agribusiness firms used contract farming to secure a constant flow of commodities for their processing and export ventures (Kirsten and Sartorius, 2002).

**Risk sharing is achieved**

For agribusiness firms, contract farming serves as a risk-sharing strategy to mitigate production losses such as crop failure due to poor weather, disease, etc. Here, the farmer takes the risk of loss of production while the company absorbs losses associated with reduced or non-existent throughput for the processing facility.

**Reliable production is secured**

Greater reliability of agricultural product supplies is ensured. With contracts, agribusiness firms can schedule product deliveries to optimally utilize their processing capacity and/or distribution infrastructure and to meet the demands of their clients.

**Greater conformity to desirable product quality attributes and safety standards is promoted**

Since quality attributes are specified in the contract and the agribusiness firm has access to control the farm production process, firms are in a better position to meet consumer requirements and mandatory quality and safety standards.

**Credit access and public incentives are facilitated**

The confidence of financial institutions is enhanced when production risk is reduced via contract farming arrangements. Hence, credit access is improved and financing conditions tend to be more favorable to the firm. Countries that promote contract farming often use financial incentives and subsidies as instruments in their agribusiness development policies. The incentives might include tax breaks, foreign exchange quotas, profit repatriation flexibility, and tariff reduction for imported inputs.

**Labor costs are reduced**

Contract farming enables agribusiness firms to reduce labor cost as compared to full vertical integration, i.e. the estate model where the firm must hire and manage its own labor force. Labor costs, including wages, social benefits, supervision, and training can represent a significant share of production costs in
labor-intensive farming operations. In contract farming, farmers often use family labor and they may not be bound to the same labor laws as agribusiness firms. Thus, labor costs tend to be lower under contract farming arrangements.

**Flexibility in production is facilitated**

Without fixed assets in land or specialized housing for animals, for instance, agribusiness firms have greater flexibility to expand or reduce operations. This allows better adjustment to market developments.

**Improved production efficiency could be achieved for the production of high-value and labor-intensive agricultural enterprises**

In contracting schemes, evidences show that family farming units tend to have comparable or even better productivity, when compared with larger and commercially managed units. The main reasons are the invested commitment and the comparative advantage in the management of small farming operations. In Brazil, contracted smallholder poultry farmers were frequently found to have high production efficiency as compared to other contracting farmers (Da Silva, 2005).

### 10.4 Major Limitations to Agribusiness Firms

While contract farming as a coordination strategy has several potential advantages for agribusiness firms, it has also some shortcomings that emanate from the risks and transaction costs associated with contracts. The major disadvantages are outlined as follows (Eaton and Shepherd, 2001; Kirsten and Sartorius, 2002; Da Silva, 2005):

There is a risk of contractual holdups. Like agribusiness firms, farmers could also be tempted to breach their contractual agreements and sell all or part of their production to a third party when prices are perceived to be higher outside the contractual bond. This problem is often referred to as *extra-contractual marketing* or *side selling*. The problem of side selling is critical in situations where alternative markets are easily accessible and contractual enforcement mechanisms are either weak or absent. Extra-contractual marketing is cited as the major factor...
contributing to the failure of most contract farming projects in developing countries.

**High transaction costs due to small size, large numbers, and spatial dispersion of contracted farmers.** The major disadvantage frequently associated with contract farming in developing countries is the high level of transaction costs. Transaction costs are often high in contractual arrangements involving large numbers of small-scale farmers who are spatially dispersed. In this case, high transaction costs are incurred due to the structuring, administration, and enforcement of a large number of contracts. Furthermore, the firm incurs additional costs for supervision and monitoring in relation to the delivery of support services and inputs to farms that are small and spatially dispersed. Since farmers make smaller and more frequent deliveries of products, the logistic costs tend to be high for supply assembling.

There is a risk of input diversion. The most common problem in resource provision contracts is that farmers are tempted to use inputs supplied under contract for alternative crop and livestock production. Farmers may use the distributed inputs on their subsistence crops or may feed their domestic herds or flocks. They may even sell the inputs. In this case, productivity and quality of contracted commodities will be negatively affected. Agribusiness firms tend to overcome such problems by close monitoring using their extension staff, training farmers, and providing realistic quantities of inputs. With good management, input diversion is not a serious problem in contract farming. When farmers understand the contractual arrangement advantages such as technical inputs, credit access, and a guaranteed market, the majority conform to the agreement.

There is lack of flexibility to look for alternative supply sources. With a binding contractual agreement, the agribusiness firm is precluded from sourcing supplies from alternative suppliers even in cases where market changes are in favor of alternative supply sources.
11. Preconditions for a Successful Contracting Farming

Being an investment venture, the primary precondition for contract farming is that it must be economically viable, i.e. profitable subject to certain conditions. Yet, profitability alone is not a guarantee for success. The success of contract farming further depends on other basic preconditions that involve uncontrollable external factors in economic, technical, physical, social, and institutional environments. The following factors have been identified as the major preconditions for successful contract farming arrangements between agribusiness firms and smallholder farmers (Eaton and Shepherd, 2001; Simmons, 2002; Da Silva, 2005; Shepherd, 2007):

11.1 A profitable market
Identification of potential markets alone by agribusiness firms is not enough to guarantee success in contract farming. The markets must be profitable for both contracting parties. Hence, the agribusiness firm must have identified a profitable market for the contracted production and be sure that farmers will obtain higher net returns from entering into a contract than they could obtain from existing or alternative activities with the same, or less, risk. In the initial phase, a farm profitability analysis should be made based on realistic farm budget data so that the agribusiness firm will be in a position to establish a pricing structure that is mutually profitable. Farmers will commit to a long-term business relationship with agribusiness firms provided that they get guaranteed, regular, and attractive incomes.

11.2 The enabling environment
While the private sector is the major economic actor in the production, processing, and marketing of agricultural products, the government has an indispensable role in guiding and facilitating this development. The government can enhance the development of agro-value chains by providing an appropriate macro-economic framework as well as necessary public goods such as roads/infrastructure, research, rural support services, and suitable policy and legal environments. In general, the success of contract farming depends on the following enabling environment:
11.2.1 The policy environment
A conducive policy environment is a basic precondition for the success of contract farming. Governments should concentrate on developing an environment that can enable the private sector to function in a competitive way. Policies likely to influence the success of contract farming include interest rates, exchange rates, existing taxation and tariff structures, as well as land ownership policy. For instance, land policies preventing foreigners from holding land may favor the expansion of contract farming by excluding plantation development by multi-national corporations (Simmons, 2002). If land ownership is not clear from a legal perspective, then land cannot be used as collateral for input loans. In this case, contracting firms have a major strategic advantage in negotiating with smallholder farmers and access to credit becomes the rationale for contracting (ibid.). However, there is a wider consensus that uncertain land ownership creates disincentives for farmers to invest in land improvement activities and in new enterprises in order to exploit market opportunities.

The target of many contract farming arrangements is the supply of farm products to either export or import-competing markets. Therefore, unstable exchange rates can lead to difficulties in contract farming since revenues are earned in one currency while costs are incurred in another. Thus stable exchange rate regimes favor contracting while unstable regimes place contracts at risk.

Sometimes, governments go beyond facilitation and design policies that limit sectors in which investment is to be encouraged. Loans for new or existing industries tend to distort competitive advantage if investments are not made based economic criteria. This approach creates a disincentive for purely commercial investments.

11.2.2 Legal and regulatory framework
Contract farming involves a contractual agreement between the contracting parties that has to be backed up by appropriate laws and an efficient legal system. Legal issues are the major critical success factors for contract farming in many developing countries. While there are three major categories of contract laws based on their functions, the enabling aspect of the law is the most important in the context of contract farming arrangements (Cullinan,
Contract laws contribute to the evolution of commercial transactions beyond direct barter exchange.

The experience of contract farming as a business model in developing countries is relatively a recent one; therefore, there is no legislation that specifically regulates contract farming arrangements. The agribusiness firms entering into contractual agreements with farmers' cooperatives must be sure that the cooperatives are on a sound legal footing. The other critical issue is the ability to enforce agreements in the courts of law. Legal contractual agreements are often breached due to lack of enforcement mechanisms. Enforcement through court procedures is universally slow and even if a judgment is eventually obtained there are usually problems in enforcing it and the costs incurred are often greater than the amount claimed. Conversely, small farmers will never have the means to bear the costs of fighting large companies in court. The use of third-party arbitration may be one way of addressing this problem. Both government and the private sector could plan an important arbitration or dispute resolution role.

There are other important areas where the government can create an effective enabling environment, such as the introduction of regulations specifying pesticide use, food standards and safety, seed quality, and provision of arrangements to certify quality and geographic origin. Although antitrust legislation is desirable, governments should avoid the tendency to over-regulate. The emphasis should be on creating an enabling environment for successful market linkages rather than on controlling economic actors involved in production and marketing.

Agribusiness companies are unlikely to invest in situations where corruption is prevalent. Firms involved in export business frequently complain about the red tape and the costs incurred in complying with excessive bureaucratic regulations and procedures (Eaton and Shepherd, 2001). Hence, the implementation of anti-corruption laws and the limitation of lengthy bureaucratic procedures could have a positive impact on the outlook of potential investors.

11.2.3 Infrastructure
The availability of adequate infrastructure such as roads, transport, power, water supplies, and telephone and other telecommunication facilities is
important for attracting agricultural investment in rural areas. Agro-processing and export of fresh produce demand reliable power and water supplies. In contract farming, farm produce should be transported easily to the market and farm inputs should be delivered to farmers on time. In addition to the development of major road infrastructure, the availability of adequate feeder roads to farms is very critical for perishable crops or crops that need to be processed soon after harvest such as tea, oil palm, and sugar. The existence of adequate air transport infrastructure is another important precondition for the export of high-value horticultural crops under contract farming. Especially fresh vegetables and cut flowers depend on adequate cargo space to global markets. The provision of communication infrastructure was considered to be vital in the past. Yet with the rapid expansion of mobile phone services, the role of the government has become more of a service facilitator than a service provider.

The availability of education and health services for farmers and agribusiness firm staff is also an important success factor for contract farming.

11.2.4 The institutional environment

There are critical developmental roles of governments that greatly influence the success of contract farming in developing countries. Some of the major developmental roles include provisions of institutional support services such as marketing information, agricultural extension, research and development activities, and capacity building. In this context, the government could manage the following enabling activities to sustain the development of contract farming schemes:

Development of a comprehensive market information services that could provide information on local and high-value export markets. Smallholder farmers often lack basic marketing information on current prices and future market developments.

Provision of training and capacity building in technological and managerial skills at all levels, if the agribusiness firms do not provide such services. For instance, if contracted farmers are organized into cooperatives, governments can play an important role in the capacity building of cooperatives in terms of modern management skill training. It has been argued that while the performance of agricultural cooperatives in developing countries has been marginal at best, improving the management capacity of
these organizations greatly enhances their business performance and marketing skills and the transfer of technology to member farmers (Eaton and Shepherd, 2001).

**Provision of research and development support that facilitates the development of contract farming.** Agricultural research contributes to the development of contract farming by delivering technical solutions in close collaboration and consultation with the agribusiness firms. Agricultural research institutes could benefit smaller ventures, especially those managed by small individual firms who cannot sustain their own plant breeding programs, etc.

**Provision of agricultural extension services for ventures that do not employ their own field staff.** Small-scale firms cannot afford to manage their own extension services and thus need to make use of government services. In addition to the provision of advice, public extension staff could play an important role in promoting market linkages between farmers and agribusiness firms. In this context, the strengthening of marketing skills of extension staff would be important for the success of contract farming.

**Provision of specialized institutional support services to agricultural production and marketing systems.** Special public support services such as quarantine controls, plant pathology clinics, and research stations are important for the success of contract farming. Such services are particularly necessary for companies that invest in high-value export commodities or organic farming.

**Provision of a government-run certification program for agribusiness firms.** The government has also a role to play in verifying that companies proposing to invest in contract farming are genuine and committed to establishing a long-term business relationship with farmers, rather than short-term operations which may leave farmers with a high debt risk. The agribusiness firms must demonstrate their financial strength, proven managerial competence, and technological experience.

The Government can also play a major role in promoting the establishment of industry associations that could create a forum for discussions about individual industries and support farmers' market linkages. Association members should
be drawn from all relevant sectors of an industry. The possible functions of these associations may include (Shepherd, 2007):

- Contract monitoring, registration, and arbitration;
- Taking steps to reduce extra-contractual marketing;
- A forum for discussions involving companies, governments, and farmers;
- Identification of research and development requirements;
- Domestic or export market promotion; and,
- Most importantly, policy liaison with government when problems relating to the industry are encountered.

In Africa, an example of such associations is the Sugar Board of Tanzania that was established with members drawn from both sugar millers and out-grower farmers. The board serves as an arbitrator on behalf of all its members to resolve issues related to breaches of contract and allegations of inaccurate grading and weighing (Shepherd, 2007). In South Africa, the South African Sugar Association is also responsible for setting the price paid to out-growers.

11.3 Input availability

In most contract farming ventures, the agribusiness firms are responsible for the recommendation, procurement, and distribution of many or all farm inputs. In this case, the agribusiness firms need to be assured that they will be able to organize the supply of all necessary inputs for the farmers and for their own processing needs. All inputs should be identified and ordered well in advance, either from local or global markets. Failure to have ready access to these farm inputs can cause serious disruption to the production chain and can cause serious financial losses for all contracting parties. For instance, the failure of on time feed supply to poultry and pig farms can have major consequences for the contracting farmers.
11.4 The physical environment

The physical environment is an important success factor for investment in contract farming. In general, it determines yields, quality, and profitability of agricultural products. The physical environment is first related to the suitability of the topography, climate, soil fertility, and water availability. In addition, it is related to the suitability of the agro-ecology in a particular area for the production of a specific plant genotype or animal under contract farming. Agro-ecology includes soil, water, temperature, and other climate variables.

11.5 The social environment

The success of investment in contract farming is influenced by the social environment. The social environment includes culture, values and norms, attitudes, living and working conditions, educational background, and income levels. In many developing countries, rural communities are very skeptical of modern agribusiness activities and strongly influenced by traditional practices. They are normally more conservative in their ambitions and material needs. There also exist diversities in perceptions and attitudes towards work. Therefore, prior to the actual implementation of any agribusiness project, there is a need to develop a better understanding of the society's culture. In the case of contract farming, the contractor must be aware of the risk of disputes when more than one cultural group is involved in the contract.

It should also be noted that the economic success of contract farming could have social repercussions that jeopardize its long-term success. Such a situation could occur when the opportunity to participate is limited to a certain number of farmers. If farmers are selected based on farm resources, the arrangement may widen the apparent income disparities and lead to resentment on the part of those excluded from the project.

12. Patterns and Significance of Contract Farming

Contract farming is not new to agriculture – it is an institutional arrangement that dates back to the beginning the 20th century. Different forms of contractual arrangements were employed by United States multinational firms in Central America at the beginning of the 20th century, and by the Japanese in
the last decades of the 19th century for sugar production in Taiwan (Watts 1994; Runsten and Key, 1996; Rehber, 1998). The formal farm-corporate contractual agreements were merged with the establishment of large estate plantations during the colonial period and further started to gain momentum immediately after the end of the colonial period when many of those independent states posed restrictions on the development of plantations (Watts 1994; Baumann 2000; Eaton and Shepherd, 2001).

A comprehensive review by Minot (1986) on the patterns of contract farming arrangements in developing countries shows that industrial crops, dairy, poultry, and fruits and vegetables were the major agricultural commodities produced under contract farming projects that were initiated during the period between 1950s and early 1970s. During this period, different political and economic factors resulted in the growth of contract production and the relative decline of plantation production (vertical integration). During 1960-1976, there was a wave of nationalizations of foreign agricultural enterprises in developing countries (UNCTAD, 2009). Those contract farming projects were characterized by different arrangements involving mainly American and European transnational agribusiness firms, the public sector of the host country, and small-scale farmers. The major commodities under contracts included banana (Latin America), tobacco (Africa), rubber (Asia), oil palm (Africa and Asia), sugarcane (Africa and Asia), tea (Africa), and dairy and poultry (Asia and Latin America). Furthermore, multinational corporations were actively engaged in contract production of fruits and vegetables in most developing countries across Africa, Asia, and Latin America.

Contract farming schemes in developing countries have been broadly divided into two based on the types of commodities and the relative involvement of the private and public sectors (Glover, 1994). The first is contract farming involving the production of traditional tropical commodities such as sugar, rubber, and oil palm, which tend to be produced on large estates at lower cost. Contracting of such commodities involves a large number of growers, tight central control, and service provisions by the central processing unit such as irrigation, harvesting, and spraying. Involvement of donors in these projects is highly significant. These projects are often referred to as out-grower schemes, which are particularly common in Indonesia and Malaysia (rubber and oil palm) and in Africa (oil palm, sugar, and tea). The second is contract farming schemes involving the production of high-value export commodities such as fruits and
vegetables. This scheme is based on more private sector involvement and less tight centralized control. The company provides quality control, brand names, and marketing channels. Such schemes are common in Central America and Thailand.

Contract farming is a significant and growing institutional arrangement in the production and marketing of agricultural commodities in economically advanced countries. For instance, contract farming was used for vegetable production in the US and for seed production in Europe in the decades before World War II (Rehber, 2007). It is estimated that contract farming accounts for about 32 percent of the total agricultural production in the US (USDA, 1996). The commodity composition shows that 83 percent of the total contracted agricultural production includes vegetables, fruits, nursery, beef, hog, dairy, and poultry products. Furthermore, 85 percent of the broilers are produced under contract while the remaining are vertically integrated (Perry et al., 1999). In Japan, 75 percent of broiler production is under contracts, while in Germany about 38 percent of dairy, poultry, and sugar production are produced under contractual arrangements (Rehber, 2000).

Contract farming has spread globally in many developing countries across Africa, Asia, and Latin America due to ongoing agro-industrialization and globalization processes (Kirsten and Sartorius, 2002; Da Silva, 2005). Spurred by changes in technology, urbanization, income growth, consumer preferences for differentiated products, trade liberalization, and foreign investment, the agri-food systems are increasingly organized into tightly aligned chains, where the coordination of production, processing, and distribution activities is closely managed. Furthermore, the rapid expansion of supermarkets, the emergence of private grades and standards, and the use of strict quality and safety regulations have resulted in major changes in food and agricultural markets and intensified the need for vertical coordination in agricultural supply chains. Here, contract farming serves as a coordination strategy that facilitates the integration of smallholder farmers into the agro-value chain.

Although there are a few cases of mixed results, the contributions of contract farming to employment and poverty reduction in developing countries are generally positive. In this context, it has achieved the attention of high-level policy organizations such as the World Bank and UNCTAD. UNCTAD, in its Annual World Investment Report (UNCTAD, 2009), gives due attention to the
role of contract farming in agricultural development and poverty reduction in developing economies. UNCTAD unveils that contract farming projects by Transnational Corporations (TNCs) are spread globally in more than 110 developing and transition economies, covering a wide range of commodities and, in some cases, accounting for a high share of production. Furthermore, the World Bank, in its World Development Report (World Bank, 2008), pays special attention to the significance and major role of contract farming in linking smallholders to the agro-value chains. The World Bank recommends contract farming and the establishment of producer organizations to promote the commercialization of smallholder farmers and bring agriculture to the market (World Bank, 2008).

In view of its development significance to developing countries, other international lending and aid organizations such as the International Finance Corporation, the Commonwealth Development Corporation, and the US Agency for International Development (USAID) are among the biggest supporters of out-grower schemes and have pioneered palm oil, cocoa, and rubber contract farming across Africa, Asia, and Latin America (Glover and Kusterer, 1990; Glover, 1994; Bauman, 2000).

The experience of many developing countries shows that contract farming provides strategic alternative options to FDI in terms of the participation of TNCs in agriculture, and the trends are on the increase (Da Silva, 2005). In 2008, the Swiss food company, Nestlé, had contracts with more than 600,000 farmers in over 80 developing and transition economies; Olam, a TNC from Singapore, has a global contract farming network with about 200,000 farmers in 60 developing countries; Unilever (UK/Netherlands company) sources about 66 percent of its agricultural commodity supply from contract farming arrangements with approximately 100,000 small and large farms in developing countries; and Carrefour (France) contracts with farmers in 18 developing countries (UNCTAD, 2009). In addition, there are also some other average size TNCs that are engaged in contract schemes in developing countries. The company SAB Miller from UK contracted with nearly 17,000 smallholder farmers in India, South Africa, Uganda, Tanzania, and Zambia in 2009; in 2008, Grupo Bimbo (Mexico) had over 3,000 contract suppliers across various Latin American countries; and KitokuShinryo (Japan) contracts with more than 2,000 farmers in Vietnam, Cambodia, and Thailand through a joint venture (ibid.).
Contract farming plays a major role in underpinning agricultural production and related activities in developing countries. UNCTAD (2011) lists five countries where contract farming accounts for a significant proportion of their agricultural production:

- Brazil where 75 percent of poultry and 35 percent of soya bean production are sourced through contract farming;
- Kenya, where about 60 percent of tea and sugar and nearly all of cut flower exports are produced through contract farming arrangements;
- Mozambique where most cotton and tobacco production is under contract farming arrangements while about 400,000 smallholder farmers are engaged in contract farming activities;
- Zambia where 100 percent of cotton and paprika are produced through contract farming arrangements; and
- Vietnam where about 90 percent of cotton and fresh milk, 50 percent of tea, and 40 percent of rice are sourced through contractual arrangements.


Current evidence shows that the pattern of contract farming varies among African countries. Although contract farming and related activities are prevalent in most African countries, the available case studies are dominated by only a few countries such as Kenya and Zimbabwe. This could be related to the fact that contract farming arrangements seem to be more developed in these countries, especially Kenya, and thus information is more easily available. Here is a review of selected case studies to draw best practices that could be adapted and scaled up in other socio-economic contexts.
13.1 Kenya

13.1.1 Kenya Tea Development Agency (KTDA)²

The tea contract farming scheme by the Kenya Tea Development Agency (KTDA) is one of the largest and perhaps the oldest out-grower scheme in Africa involving smallholder farmers. KTDA was established in 1964 by the Government of Kenya, the Commonwealth Development Corporation (CDC), OPEC, and the EEC. Within a period of nearly two decades, it had managed to involve 151,000 smallholder farmers covering a total area of 57,000 hectares. The total contract tea production increased from 6 percent, in 1965 to 33 percent in 1980. KTDA has been further increasing tea production for the past four decades through large-scale out-grower schemes. The then-public enterprise (parastatal) was privatized in 2000.

It should be noted that KTDA sets up factories to source supplies from out-grower farmers in a relatively well of and ecologically favorable region and does not have a nucleus estate. Currently, KTDA is the largest private tea management agency running 63 factories in the small-scale tea sub-sector in Kenya. Current evidence also unveiled that the size of the out-grower scheme has increased significantly from 350,000 in 2002 to nearly 600,000 smallholder farmers cultivating about 109,000 hectares in 2010. In the same year, the total tea production from KTDA out-grower schemes accounted for 50 percent of the total national tea production. In addition, about nearly 90 percent of the total tea production by the smallholder contract farmers is Grade I tea, which commands premium prices on global market. Currently, the total tea production by KTDA is 400,000 metric tons and is the major actor in the tea value chain in Kenya.

It is very important to understand how KTDA manages its contract farming scheme in order to understand its success. The contractual arrangement stipulates the provision of inputs, credit, and extension. There are effective monitoring and control mechanisms at all levels of the production process, i.e. the quality of planting material through control of nurseries; the quality of production through selective registration; the effectiveness of extension; the supervision of leaf quality; and critically, the exercise of a buying monopoly. Tea is a labor-intensive crop that requires labor input through the year. In this

²Glover and Kusterer, 1990; Baumann, 2000; Oya, 2012; KTDA official website: http://www.ktdateas.com/
context, the KTDA has tried to limit the average holding of small-scale farmers to one hectare to ensure that plucking standards are maintained. This has contributed to the quality of smallholder tea, which is consistently of a higher standard than estate tea. Farmers are registered and guaranteed purchase of output as well as technical assistance and credit. Payments to the growers are made throughout the year; one for quantity and another from quality-related bonuses. This provides an incentive for the out-growers to maintain good management of their tea. Furthermore, the management structure allows for farmers participation in policy-making and about 8 percent of the smallholder farmers are shareholders in tea factories.

In addition to the effectiveness of management, government support has contributed to the success of the scheme. Prior to the privatization in 2000, the parastatal KTDA was responsible for marketing and input distribution, and management and ownership structure included the government, donors, transnational capital, and an extension system combining government and private support. While there are exact figures and facts on household impact, some narrative studies noted that KTDA has a positive impact on smallholders' income, which is above average for the region.

13.1.2 Mumias Sugar Company Limited (Kenya) Out-Grower Scheme

The Mumias Sugar Company (MSC) was established in 1972 in western Kenya by Kenyan government with finance involving the Commonwealth Development Corporation (CDC), Booker Agriculture International (BAI), and the World Bank. MSC was functioning as a private company under the contract management of Bookers Agriculture and Technical Services until it was converted into a public company in 2001. The government has been always the major shareholder with about 71 percent, while the remaining shares are with the private sector. In 2001, MSC has been listed on the Nairobi Stock Exchange

MSC initially begin sugar production with its own 19,750 hectare plantation. Currently, the company has typically a nucleus model structure and its nucleus estate covers some 3,800 hectares and its contract farming scheme involves

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66,000 smallholder farmers covering 64,000 hectares. The nucleus estate accounts only for 5.6 percent of the company’s total sugar cane area. The small sugar cane farmers supply around 90 percent of the company’s cane requirements. The nucleus estate has been leased on a long-term basis from the government of Kenya. It is worth noting that all sugar production is entirely rainfed due to the good agro-ecology of the region.

The current sugar production by MSC accounts for 53 percent of the total domestic sugar production in Kenya. In terms of market share, MSC covers 60 percent the local market and it exports at least 20,000 tons per annum to markets in the European Union.

MSC’s contracts clearly stipulate the roles of each contracting parties. Farmers are expected to follow the company’s recommended management practices (timely weeding, fertilizer application, trash lining, and pest and disease control) and cultivate seed cane nurseries for multiplication of seed cane material to be supplied to other farmers. MSC arranges timely service provisions including proper land preparation, land survey, soil analysis, supply of adequate and quality seed cane, fertilizer, and quality harvesting and cane transport. Costs of farm inputs and machinery services are on a credit basis to be deducted from crop payments. The company makes prompt payment of farmers. The company conducts routine field inspections to check the field operations. The management assumes the tasks that are performed improperly and charges farmers for the service. The application of chemicals is tightly specified, though it is difficult for the company to control. MSC also provides technical services through its extension program. In order to improve farmers’ awareness on farm technologies, the company organizes educational programs through public meetings, seminars, field days, and field demonstrations in collaboration with relevant government ministries such as the Ministry of Agriculture, Kenya Sugar Research Foundation, and Provincial Administrations.

MSC is also actively involved in a number of community development projects such as health, education, environment, and road and other infrastructure development in line with its Corporate Social Responsibility (CSR) policy. The company has engaged in other sideline projects such power generation where it sells 26 MW electric power to the nation grid. MSC has been widely cited as a successful agribusiness company that is economically viable and beneficial to smallholder farmers.
13.2 Zimbabwe

13.2.1 Cotton Company of Zimbabwe

The Cotton Company of Zimbabwe (Cottco) is the largest cotton buying, processing, and marketing agribusiness firm in Zimbabwe. The company accounts for about 80 percent of the total cotton production in the country and has two ginneries zones. The company was initially established by the Cotton Marketing Board (CMB), which was a public enterprise in 1969 and began contract farming in 1992. The company was commercialized and privatized in 1994 with the privatization policies. Currently, it involves about 55,000 to 60,000 out-grower farmers. Prior to its privatization, the company had a monopsonistic power in the cotton industry as the sole buyer and ginner of cotton.

The Cottco contract farming scheme is the centralized model involving a formal agreement based on a detailed written contract. The company has contractual arrangements with individual farmers instead of farmer groups. The out-grower scheme is functional in major cotton growing areas of the country. Currently, Cottco has 29 marketing centers (stores) in major cotton producing areas of Zimbabwe; of these, nine are ginneries with a combined capacity of 265,000 tons of seed cotton.

The contract clearly stipulates the roles and responsibilities of each contracting party. The Cottco contract involves provision of inputs credit to smallholder farmers based on previous production performance. Farmer selection is generally based on previous performance record, i.e., farmers with higher output records are more preferred. The farm inputs include seed, fertilizer, chemicals and sprayers, picking bags, cotton bales, and tillage and transport services. The contract also provides cash loans for hired labor for weeding and picking. Interest rates are considerably lower than the market. The duration of the contract is seasonal but outstanding loans can be carried over into the next season. Interest accrues on any outstanding debt. In accordance with the contract, the farmer is compelled to deliver all his/her cotton output to the company. Using in-house extension staff, Cottco provides technical advice and extension services; extension workers closely monitor the farmers and coordinate harvest collection. The company has an extensive network of warehouses along with transport services in the main cotton growing areas for

Woodend, 2003; Cottco official website: http://www.thecottoncompany.com/
facilitating the marketing process. The company also facilitates prompt payment in the form of cash or check.

A group peer monitoring mechanism is employed to enforce compliance with the contract and reduce the risk of side-selling and default. Accordingly, contracted farmers are organized into groups and the entire group must serve as a guarantor for the input credit. If any member of the group fails to repay or side markets, the entire group is penalized and risks being dropped from the contract. The group monitoring mechanism has proved highly effective in preventing the risk of default. The company also employs incentive mechanisms in the form of premium payment for high quality cotton, cash bonuses, and annual competition awards.

It has been cited as a successful scheme combining profitability with benefits to smallholders.

13.3 Ghana

13.3.1 Ghana Oil Palm Development Corporation (GOPDC)\(^5\)

The Ghana Oil Palm Development Corporation (GOPDC) is the largest company engaged in oil palm production through contract farming with smallholder farmers. GOPDC was established in 1975 with financial assistance from the International Development Association (IDA). It was originally a state-owned firm but was privatized in the 1990s following the economic reform program in Ghana. The company has a nucleus state model where it operates a central estate plantation of 14,153 hectares located at two locations and also has a large out-grower scheme involving small-scale farmers. Currently, the out-grower scheme covers 13,000 hectares by involving about 7,000 smallholder farmers. The farmers are located within a 30 kilometer radius from the GODPC processing plant.

The contractual arrangement stipulates that GOPDC provides inputs on credit to the farmers and in return the farmers supply 100 percent of the output to the company. The cultivation of food crops is prohibited. The farm inputs include palm seedlings, organic fertilizer, technical assistance, and organic pest management. The company covers the largest portion of the investment while

\(^5\)Daddieh, 1994; Baumann, 2000; Huddleston, 2006; GOPDC official website: http://www.gopdc-ltd.com
the farmer covers a limited cost at planting. Contracted farmers are granted a seven-year grace period on their loan, and start repayment when the trees are in full production. Loan servicing is based on a percentage of the value of the delivered output.

In addition, GOPDC provides extension services to the farmers. The company divides its catchment area into 12 districts, each assigned with an extension officer responsible for close supervision of the fields. GOPDC also has 31 collection centers to facilitate the timely collection of the crop. Every center is responsible for the harvest collection from an average of 220 farmers. The company provides transport service from the farm gate to the processing plant.

GOPDC has been cited as a more successful scheme in terms of generating economic advantages to out-grower farmers as well as benefiting the surrounding communities.


Contract farming schemes are very diverse and their success is greatly influenced by the prevailing political, economic, and social conditions of a given country (Eaton and Shepherd, 2001; Woodend, 2003; Da Silva, 2005; Oya, 2012). In addition, contract farming is dictated by the technical characteristics of the commodity and market demand (Minot, 1986). Therefore, scaling up of some successful contract farming projects should be undertaken with emphasis on these critical factors; some modifications will have to be made to make the arrangements compatible with the prevailing agricultural, political, institutional, and socioeconomic conditions in each country.

A review of case studies on contract farming has been made based on a sample of selected successful contract farming schemes in Africa. As indicated, these contract farming schemes have been operating successfully for approximately the last four decades. Over the years, there has been a remarkable growth in the number of out-grower farmers involved and the scale of operation, i.e. capital and farm size. Their success has also been explained based on the economic advantages to the contracted farmers as well as the agribusinesses.
The following best practices are drawn from the successful contract schemes that could be models for other smallholder contract farming projects in Africa.

**Active public-private participation**
The case studies clearly unveil that the management and ownership structure of agribusiness firms includes the government, donors, and transnational capital. The government is still a major shareholder of the agribusiness companies indicated in the case studies. Consequently, there has been a longstanding tripartite relationship between the public, agribusiness, and smallholder farmers. The contract farming schemes have had strong government support expressed in the creation of an enabling environment. The extension system is supported by the combination of public and private sectors.

**Empowerment of small-scale out-growers**
There are a few companies where contracted smallholder farmers are participating in decision making through their involvement as shareholders. Empowerment enhances the sense of ownership on the part of smallholders and promotes long-term trust in business relationships. This is evident from the case of KTDA, Kenya.

**Commitment to make significant investment in inputs procurement and development of market and service networks**
Agribusiness firms invest heavily in the procurement of farm inputs and delivery of support and monitoring services for contract farmers. In most cases, they have employed properly trained personnel who provide extension and input provision services, as well as other support services required by the smallholder farmers. The marketing of the contracted commodity is facilitated through an extensive network of collection centers, provision of packaging materials, and transport services. Payment to smallholder farmers is effected promptly after delivery of the commodity.

**Group liability in the provision of inputs credit**
A group peer monitoring system and holding the entire group accountable for compliance and repayment has been used as the best alternative enforcement mechanism. Normally, farmers do have more information on the creditworthiness of their group members that the contractor would probably have, and therefore the farmers can screen out potential defaulters.
penalty for non-compliance is generally exclusion from future participation in the scheme as opposed to legal enforcement to recover any debt.

**Provision of broad range and quality services**
All the contracting schemes essentially involve the provision of inputs credit and repayment upon delivery of output. In addition, there are also cases where firms extend cash loans to their out-growers for labor-intensive commodities to cover weeding and harvesting costs. Timely provision of machinery, transport and other support (e.g. grading) services are also the main features of the schemes. Delivering timely services that respond to farmers' needs creates incentives for farmers to honor contracts, promotes long-term trust, and reduces the risk of default.

**Intensive monitoring of contracting farmers and good communication**
Virtually all contracting schemes involve intensive monitoring and supervision to ensure that farmers comply with the recommended management practices stipulated in the contract. The close monitoring is done at all stages of the production process to ensure product quality and proper use of the inputs for the intended activities. Furthermore, good communication helps develop good company-farmer relations and a sense of trust, which can contribute to the reduction of strategic default.

15. **Contract Farming in Ethiopia: Case Studies in Selected Value Chains**

15.1 **Coffee**

**Context**
Ethiopia is widely known as the primary center of origin for coffee *Arabica* with excellent quality and flavor. From the global perspective, Ethiopia holds a leading position in coffee production in Africa and is the sixth position major coffee producing country in the world. Yet, its market share in the global coffee market is very limited as compared to other countries such as Brazil and Vietnam. For instance, of the total 15.4 billion USD coffee exported in the world market during 2008/09, Ethiopia accounted only for 3 percent while
Brazil (26 percent), Vietnam (12 percent), and Colombia (11 percent) had the lion’s share (FAOSTAT, 2012).

In Ethiopia, coffee plays a major role in household income, employment, and foreign exchange earnings. It is the leading export commodity, accounting for about 26.4 percent of the total foreign exchange earnings of the country though its share was more than 60 percent in the recent past (NBE, 2010). About 3.2 million Ethiopian smallholders are directly engaged in coffee production (CSA, 2009a). The total coffee production in Ethiopia is estimated at 260,239 tons with a total coffee acreage of 391,296 hectares (ibid.). Despite its major economic significance, coffee productivity still remains very low—at 0.7 tons per hectare. The coffee sector in Ethiopia is broadly characterized by four major production systems: forest (10 percent), semi-forest (35 percent), garden (50 percent), and plantations (5 percent) (Petty et al, 2004).

Ethiopia is not only a large coffee producer but also a big coffee consumer. Current evidence showed that 48 percent of the total coffee production is used for domestic consumption while 49 percent is destined for marketing purposes (CSA, 2009c). Therefore, coffee also has a vibrant domestic market.

**Contract farming scheme**

The result of the key informant survey showed that coffee contract farming is not an apparent feature of the coffee sector in Ethiopia. All the coffee exporting companies indicated that they have never had any contractual arrangement with coffee producers. Furthermore, the available literature also showed that there has never been any sort of out-grower scheme in the coffee sector in Ethiopia at least over the last four decades. The most widely used vertical coordination mechanisms in coffee production and marketing in Ethiopia are the open or spot markets and to a limited extent vertical integration mainly from state and few private coffee plantations as well as farmers’ cooperatives and unions. The trend of coffee marketing and trade policies over the years could serve as an explanation for the absence of any contractual arrangements in coffee production and marketing in Ethiopia.

Prior to 1991, Ethiopian agricultural policy was centrally planned and characterized by quota and fixed pricing systems. The Ministry of Coffee and Tea Development controlled coffee production and marketing. Smallholder coffee producers had to sell their produce at fixed prices during fixed times of
the year. Although the participation of private traders in the coffee sector was permitted, the Ethiopian Coffee Marketing Corporation (ECMC) handled the vast majority of the coffee marketing activities. During this time, all coffee handled by ECMC and the private traders had to be delivered to auction for price fixing and quota allocation.

After the overthrow of the military regime in 1991, the Ethiopian government launched a market reform program which included the liberalization of the coffee sector. This was meant to increase producers’ prices as an incentive for increasing coffee production and export earnings. In 1992/93, the ECMC was split into two public enterprises: one fully engaged in the local market by delivering purchased coffee to auction and another that purchased and exported coffee from the auction. Private traders were also encouraged to compete with state owned companies in both local and export trade. As before, all export coffee had to go through the auction. The Coffee and Tea Authority (CTA), created in 1995, was the main government institution responsible for issues in coffee production and marketing.

Until recently, despite the various policy reforms, the agricultural markets in Ethiopia were characterized by high transaction costs, lack of market information, absence of grades and standards, and a long marketing chain. With this background, The Ethiopia Commodity Exchange (ECX) was established by Ethiopian Government with Proclamation No. 550/2007 in 2007 and became operational in April 2008. ECX is a marketplace, where buyers and sellers come together to trade, assured of quality, delivery, and payment. ECX assures all commodity marketing actors the security they need by providing a reliable, integrated system for handling, grading, and storing commodities, matching offers and bids for commodity transactions, and a risk-free payment and goods delivery system to settle transactions, while serving all fairly and efficiently. ECX creates trust and transparency through aggressive market data dissemination, clearly defined rules of trading, warehousing, payments, delivery, and business conduct, and through an internal dispute settlement mechanism.

Currently, the ECX-mandated commodities include coffee, sesame, and haricot bean and there is a plan to include other important pulse crops such as chickpea. Since its establishment, two major trade regulations on mandated commodities were developed and implemented by the government in 2008 and
2010. These trade regulations have far-reaching implications for the use of contact farming in the production and marketing of mandate commodities.

According to the Coffee Quality Control and Marketing Proclamation No. 602/2008, coffee trading in Ethiopia shall be conducted only at primary transaction centers and the Ethiopian Commodity Exchange (ECX).

Primary Transaction Centers are marketplaces where coffee transaction takes place only between coffee producers and suppliers. These markets are located in major coffee production areas of the country.

Ethiopian Commodity Exchange (ECX) where transactions take place only between coffee suppliers/ producers and coffee exporters/processors following the exchange rules. Furthermore, it should be noted that:

- The regulation reserves the right for coffee producers such as farmers cooperatives/ unions and large plantations (private or public) to process and directly export their coffee supply in compliance with the standards applicable to export provided that all products are harvested from their own farm; and
- Any supplier or exporter may participate in these coffee markets only upon confirmation that he has a certificate of competence and a trade license. A certificate of competence is a prerequisite to have a trade license.

Therefore, contract farming as a business model in coffee production and marketing is not compatible within the framework of this regulation. The marketing chain for coffee within the framework of ECX is indicated in Figure 2.
It is important to note that rejected or substandard quality coffee from suppliers or exporters should be sold to certified wholesalers at ECX for domestic consumption.

15.2 Sesame

Context

Current data shows that Ethiopia is one of the major sesame producing countries in the world. During 2008/10, on average, accounting for 6.5 percent of global sesame production, Ethiopia was the fifth sesame-producing country in the world following Myanmar (21 percent), India (16 percent), China (15 percent), and Sudan (8 percent) (FAOSTAT, 2012). During the same period, the average annual global sesame export was estimated at about 1.5 billion USD. Of this, Ethiopia’s market share was about 19 percent, making the country the second largest sesame exporter in the world. Countries such as China, Japan, Turkey, Republic of Korea, and US are the major sesame export markets in the world.

Sesame is mainly produced in the Northwest and Southwest of the country. The annual sesame production in Ethiopia is estimated at nearly 217,000 tons.
on 278,000 hectares (CSA, 2009a). It accounts for 33 percent of the total oilseed production in the country and is predominately produced by smallholder farmers as a cash crop. About 68 percent of the total sesame production in Ethiopia is channeled into the market while 19 percent is used for home consumption purposes (CSA, 2009c). Ethiopia produces different varieties of sesame such as the Humera, Gondar, and Wellega types which are well-known in global market. The first two sesame varieties are preferred for their white color, sweet taste, and aroma which are suitable for bakery and confectionary purposes. On the other hand, the Wellega variety is preferred for its high oil content suitable for edible oil production.

Like coffee, sesame also plays a major role in employment and income generation in Ethiopia. It is estimated that some 612,000 smallholders are directly engaged in sesame production. In addition, it is the second major agricultural export commodity next to coffee in generating considerable foreign exchange income. It accounts for 23 percent of the total foreign exchange earnings of Ethiopia (NBE, 2010). In recent years, its contribution to the total export earnings is on the increase. The major Ethiopian sesame export markets include China, Israel, Turkey, and Jordan.

**Contract farming scheme**

Similar to the coffee marketing proclamation, the Sesame and White Pea Beans Transaction Regulation No. 178/2010 mandates that sesame trading in Ethiopia be conducted only at primary transaction centers and the Ethiopian Commodity Exchange (ECX). Similarly, the trade regulation maintains the rights either of producers to export sesame individually or through their cooperatives if the sesame is produced from their own farm. ECX started sesame trading in May 2009. According to the mandatory trade regulation, all sesame production in Ethiopia should be traded through ECX. Therefore, the use of contractual arrangements as an alternative vertical coordination mechanism in sesame production and marketing is not compatible within the framework of this trade regulation. The sesame marketing chain with the current trade regulation is depicted on Figure 3.
If the scenario after the introduction of the sesame trade regulation in 2010 is characterized by the absence of contract farming arrangements in the sesame sector, then what was the experience with sesame contract farming prior to the trade proclamation? The results of the key informant survey involving selected major sesame exporting companies showed that there was never any contractual arrangement in sesame production and marketing among producers and sesame exporting companies. The very limited literature on contract farming in Ethiopia showed the virtual absence of contract farming arrangements in the sesame sector. An exploratory study on sesame contract farming in Ethiopia by Ayelech (2010) also indicated the non-existence of contractual arrangement in sesame production and marketing.

Nijhof (2010), in his study on contract farming arrangements in Ethiopia, made an inventory of nine contract farming initiatives in Ethiopia that were ongoing in 2009. Among these initiatives, one was the organic sesame seed company, Tradin (Selet). This company had a nucleus estate model with 300 to 600 hectares on its own farm and worked with 1500 smallholder farmers through a contract farming arrangement. The contracted farmers were from two different cooperatives. About 30 percent of the contract farmers were certified for organic production and the remaining planned to be certified by 2010. The company was employing the farmers’ group approach for provision...
of services. The company hires the extension services offered by the government. The extension workers are responsible for technical assistance including the monitoring of various production activities to ensure product quality. During field visits, the extension workers dealt with four to five appointed lead farmers per farmer group, which consisted of 100 member farmers. Contracts are not signed with individual farmers rather with the cooperatives. With the organic sesame seed company, certification of produce was done in the field and the certified produce was brought to collection centers and picked up by the cooperatives. In general, this scheme was in the initial phase and the study did not indicate the status and success of the scheme after the new trade regulation.

15.3 Maize and Wheat: Seed Context
The Ethiopian seed industry is broadly divided into two categories:

- The formal or commercial seed sector involving public seed enterprises, private seed companies, and research institutes. The commercial seed sector is mainly engaged in the production and supply of improved seeds developed by the agricultural research system; and

- The informal seed sector involving the traditional farmer-to-farmer seed exchange made up mainly of recycled or saved seeds. The informal seed sector remains the dominant source of seed supply in Ethiopian agriculture as in other many sub-Saharan African countries.

Currently, it is estimated that the commercial seed sector accounts for 10 to 20 percent of the total seed demand in the country (Zewdie et al., 2008). At the national level, the use of improved seeds in Ethiopia is at very low levels as indicated by the area of major crops covered with improved seeds. For instance, estimates showed that about 4 and 20 percent of the total wheat and maize cultivated land in Ethiopia is covered with improved seeds, respectively; the total cereals land planted with improved seeds is estimated at barely 5 percent (CSA, 2009b)

In Ethiopia, the production of commercial seeds for cereals, legumes, and oilseeds was institutionalized with the establishment of Ethiopian
SeedEnterprise (ESE) in 1978. Since then, ESE remains the major public sector organization engaged in commercial seed production and supply in Ethiopia. Recently, three other public regional seed enterprises were also established: Oromia Seed Enterprise (OSE), Amhara Seed Enterprise (ASE), and Southern Seed Enterprise (SSE) for the production and supply of improved seeds in their respective regions. In general, the role of the public sector in the seed industry is quite tremendous in Ethiopia. For instance, the public seed enterprises accounted for 50 and 90 percent respectively of the total hybrid maize and open pollinated crops seed production in 2008 (IFPRI, 2010). The ESE alone sold an average of 15,000 tons of certified seeds per annum during 2000-2006 (Yonas et al., 2008). Furthermore, annual seed production ranged between 3,600 and 21,000 tons during the same period.

Following Ethiopia’s market liberalization policy, the role of the private sector has improved in the seed industry. Especially in recent years the role and number of private seed companies has been increasing although their participation is limited to hybrid maize production. Currently, the private seed companies provide 40 percent of the total hybrid maize supply in Ethiopia (IFPRI, 2010). The government is also encouraging local private seed companies by granting them access to improved varieties developed by public research institutes. The involvement of foreign seed companies is very limited, however. For example, Pioneer Hi-Bred Seeds Ethiopia has low market share in the hybrid maize market.

Maize and wheat have been selected for the case study of contract farming as a business model in seed production and marketing for the following main reasons:

- These crops contribute significantly to Ethiopian food security. For instance, both maize and wheat account for about 38 percent of the total food grain production in Ethiopia and they share 45 percent of the total cereal production in the country (CSA, 2009a); and

- The commercial seed market in Ethiopia is dominated by wheat and maize, which account for 90 percent of the total seed supply (Yonas et al., 2008).
Ethiopian Seed Enterprise (ESE): Contract seed production schemes

Prior to 1991
The ESE is the dominant public seed enterprise with large market share and has a long experience with contractual arrangement in seed production. ESE has been engaged in seed production using its own farms and contracting with large-scale commercial farms and smallholder farmers over the last three decades or so. The use of contract seed production by ESE dates back to the 1980s when there was a planned economic system (Yonas et al., 2008). The contractual seed production arrangements with large-scale state farms were found to be effective since the state farms were well mechanized and staffed with skilled labor. However, the state farms could not manage to multiply all those crop varieties required by the smallholder farmers since the production was less mechanized and more labor intensive.

Therefore, in the 1980s, the ESE launched a contractual seed production scheme with smallholder farmers using the farmers’ group approach, i.e. producers’ cooperatives. The contractual arrangement involves a formal agreement between the cooperatives and the ESE. Quality assurance is also an important element of the agreement. Since the cooperatives were legally organized, the contractual seed multiplication agreements were binding and the cooperatives were fully responsible for honoring the contractual agreement for seed production by members. Cooperative membership enabled farmers to merge their plots and form larger clusters, which were convenient for field management. Harvested seeds were required to be stored at cooperative storehouses until seed sampling and testing were completed. ESE handled transportation of seed produce from cooperatives to ESE centers. At ESE centers, seed cleaning, grading, and packaging were done. The major contracted crops were wheat and tef. Since quota and fixed pricing were rules of the system, the contract scheme was not based on economic viability and sustainability was questionable. Finally, the scheme ceased to exist after the economic reform from a planned to a market economy in the 1990s.

Current structure: after 1997
After 1997, the contract farming arrangement with smallholder farmers was closely associated with the implementation of a five-year Seed Systems Development Project in Ethiopia, focusing on Farmers-Based Seed Production and Marketing Scheme (FBSPMS), which was financed by IDA, IFAD, and the
Government of Ethiopia during 1997-2001. The objective of the project was to organize and support groups of smallholder farmers in sustainable seed production and income generation through the provision of materials and inputs credit, training of farmers and extension workers, and small-scale seed cleaning facilities (mobile seed cleaners and maize shellers). Therefore, the scheme was not based on a long-term business relationship, but was implemented as a pilot project by the former Ethiopian Seed Industry Agency.

Following the phase-out of the seed project, the ESE started its contract seed production scheme with smallholders in 2002. Since then, the contract seed production arrangement has been functional in Amhara, Oromia, SNNPR, and Tigray. The contribution of the contract seed production scheme has increased over the last 10 years and has reached about 35 percent of the total certified seed production by ESE (Yonas et al., 2008). The major contracted crops are wheat and tef, and there are also other pulses and oilseeds in different levels.

The main features of the contract seed production scheme are described as follows:

The key informant survey indicated that the contractual seed production arrangement involves a formal agreement between the ESE and individual farmers stipulating the obligations of both parties. The contract stipulates the provision by ESE of technical support, basic or certified seed for multiplication, as well as raw seed packaging materials. The technical support includes supervision, training on crop management and quality control, as well as field inspection and laboratory tests. ESE has four Regional Coordination Offices in Amhara, Oromia, SNNPR, and Tigray that are responsible for the overall coordination of smallholder seed production activities. The District (Woreda) Agricultural Offices are also important stakeholders in providing support in terms of farmers and site selection, extension services, and monitoring activities.

ESE also guarantees market for the seed produced as long as it fulfills the seed standards agreed upon by both parties. The contract also stipulates a flexible pricing policy where a premium of 15 percent of the current grain price is added to the seed procurement price as an incentive. The current grain price is determined based on a market survey conducted within a 25 km radius, usually during the harvest time, particularly the period between mid-November and
mid-February on specific dates set jointly by the team consisting of ESE staff, farmers' representatives, and the Woreda Bureau of Agriculture. Farmers are expected to deliver all seed produce to ESE, with the exception of 10 percent which is retained by farmers for the next planting season. Rejected seeds are sold by the farmers as food grain in the normal grain market. ESE collects produce from each collection center in nearby villages using its own transport. Seed delivery to the collection centers is the responsibility of the farmer. Sometimes seed cleaning is done using mobile machines in the production areas for further seed multiplication. However, most of the seeds are transported to ESE regional centers for processing, packaging, and distribution.

Despite the moderate success of smallholder contract seed production at least in terms of its contribution to the total certified seed supply in the country, it is constrained by some major challenges that include:

- Default in both contracting parties
  - Default in seed recovery from contracted farmers. Farmers fail to deliver the agreed level of seed produce due to the anticipation of higher prices. This is related to the problem of the apparent high seasonal price fluctuation in the markets. In the past five years especially prices are not only increasing but also fluctuating tremendously. The information from the key informant survey indicated that the seed recovery rate for ESE is estimated at about 40 percent. This figure shows how intensely the scheme's sustainability is challenged.
  - Sometimes, ESE or other public seed enterprises breach the contract by failing to purchase the seed supply especially when they have a surplus due to late a rainy season and difficulty in distribution;

- Delay in payment settlement due to
  - Lengthy bureaucratic process
  - Lack of reliable price data for timely price determination;

- Lack of contract enforcement mechanisms: Despite the formal nature of the contract, the enforcement mechanism is very poor especially with smallholder farmers;
• Quality problems, i.e. farmers fail to meet the national seed quality standards, due to
  o Management problems, i.e. farmers do not follow the recommended agronomic practices
  o Seed quality deterioration during storage at farmers’ holdings
  o Small and fragmented landholding that contributes to poor field management and the consequent seed quality problems;

• Wider geographical dispersion that limits proper supervision and increases transportation costs

Contract seed production with private and public commercial farms
ESE has a long experience in contract seed production with large-scale commercial farms. The contracted crops are mainly hybrid maize and wheat which are amenable to mechanization and large-scale production. The contractual arrangement involves a formal agreement between the commercial farms and ESE stating the obligations of each contracting party. The support provision by ESE includes supply of parental hybrid lines and basic seeds of wheat and technical assistance in the form of quality control using field supervision and laboratory testing. The contract also stipulates predetermined prices agreed upon by both parties. It was noted that the scheme with commercial farms is considered successful because it has been functioning for several years.

The major problems with contract seed production with commercial farms include:
• Some commercial farms default. They often failed to deliver the level of seed production stated in the contract because they could not supply the contracted amount; and

• Management problems on the field due to labor problems (both availability and cost).

Finally, it should be noted that the function of seed processing is entirely undertaken by ESE. The seed processing uses only accepted seeds that
meet the national seed standard requirements. Packaging size is dictated by seed rate while the minim package should cover at least a minimum of half a hectare. Chemical treatment is applied only on seeds produced from ESE and commercial farms. Seed produced by smallholder are not treated with chemicals.

15.4 Honey
Apinec Agro-Industry PLC
Apinec Agro-Industry PLC is a share agribusiness company established in 2005 with three local shareholders and one foreign shareholder. The company has a 116-hectares commercial apiary located over six sites in Gimbo, Decha, and Geshadistricts in Southwest Ethiopia. The six apiary sites are used as demonstration sites for neighboring smallholder farmers in the respective areas. In addition, these sites have modern training facilities used for training of farmers, cooperative leaders, extension workers, and experts from MoA at different levels (region to district levels). Currently, the company has its own 2000 modern beehives. The company is also equipped with a honey processing facility located in Bonga with a capacity of two tons per day. The company began exporting honey in 2008 to the major target market in Europe, especially the Scandinavian countries. Apinec’s produce is certified organic and HACCP (Hazard Analysis and Critical Control Point) based Food Safety Management Systems.

The contract farming experience
The company has been engaged in honey contract farming or out-grower schemes since 2008. It adopts the nucleus estate model. The contract honey production accounts for 60 percent of the total honey supplied by the company. Currently, the company involves about 2000 contract farmers. The agribusiness firm mainly uses a group approach in its scheme, but there are a few cases where arrangements are made directly with individual farmers. Fourteen forest user groups (farmers’ cooperatives) are involved in the scheme. In addition, the company has contracted with the Zembaba Honey Producers Union located in Bahir Dar. It was noted that the contract with Zembabafocuses more on marketing than production.

The contractual arrangements involves a formal agreement but with weak enforcement mechanisms. The duration of the contract is not time bounded.
The pricing mechanism is based on global honey prices. However, the major challenge is that there are cases where local prices are higher than world prices. This comes from stiff competition from the local markets due to the apparent low production and productivity of the sector. The contract stipulates the provision of support services that includes training, extension services with in-house staff, inputs supply such as beehives, protective cloths, extraction tools, and storage and handling materials. It was noted that the input provision is normally on credit basis with a 25 percent down payment. But the service does cover only those farmers who are critically in need of the inputs credit – about 35 percent of the total out-growers.

It was noted that the contract scheme has been successful from both sides of the contracting parties. However, the scheme has also some major challenges influencing the sustainability of its success:

- Lack of enforcement mechanisms
  - there were some cases of side-selling. Farmers often breach the contract when local honey prices are much higher than the price offered by the company;

- The cooperatives are not business oriented and lack the confidence to make timely marketing decisions. They tend to have speculative behavior on prices;

- There is sometimes the problem of competitiveness, i.e. local prices are higher than world price. This is closely associated with the apparent low honey production and productivity;

- Post-harvest problems:
  - storage and handling
  - hygiene problems when transporting from farm to the collection center; and

- Lack of clear strategies for promoting out-grower schemes from policy makers.
Beza Mar Agro-Industry PLC
The agribusiness company was established in 2003. Initially, it engaged in local markets until 2006. However, its current market destination is for export. The company has never had its own apiary although there is a plan to establish a farm with 400 beehives in 2011/12 in Sheka Zone, particularly in Andrache and Masha Districts. The company has been certified for fair trade, organic certification, and HACCP-based food safety management system.

The contract farming experience
The company has been actively engaged in marketing contractual arrangements since 2006. The structure of the contractual arrangement is roughly represented by the central type model. The company’s contractual arrangement involves farmers groups or cooperatives. There is a contractual agreement between Beza Mar and the following farmer groups:

• Five farmer groups that have been organized and established as PLCs with each group having 100 member farmers
  o They are suppliers of honey to Beza Mar both from their own farm and non-member farmers in the market; and

• Two honey producer cooperatives
  o They supply honey from member farmers only

Beza Mar provides training with financial support from different development partner projects such as USAID-CIAFS. The training includes marketing and technical issues such as management and quality issues. The contract does not include the provision of inputs, extension, and credit services. Pricing is based on the current market price. The contract arrangement has been made for a period of three years. The major limitation of this contract arrangement is that the commitment from both parties fails to establish a long-term business trust. If the company does not create a sort of incentive that is different from the spot markets, then it is more likely that contracts will be breached and the sustainability of the project will become fragile. In general, the range of the contract provisions is limited and not different from the spot markets. Other major problems of this contract arrangement include: low productivity and production, high farm gate price, and quality problems.
15.5 Passion Fruit

**AfricaJuice Tibila Share Company**

AfricaJuice Tibila SC, Which Is A Joint Agribusiness Company Between The AfricaJuice BV In The Netherlands and the Ethiopian government, engages in the production and export of tropical fruit juices; it is operating under Fair Trade Principles. The company was established in 2008 but took operational control of Tibila Farm in the Upper Awash Valley in April 2009. The establishment of the company involved the privatization, rehabilitation, and expansion of a former state fruit farm into a high-tech drip-irrigated tropical fruit plantation. It is one of the FDI projects that have been implemented in Ethiopia since recent years.

The company has a total farmland of 1,334 hectares. It plans to have a fruits plantation consisting of 600 hectares of yellow passion fruit, 300 hectares of mango, and 300 hectares other tropical fruits such as papaya and avocado over a period of five years. Currently, the firm is actively operating 500 hectares of tropical fruits and citrus. Moreover, it has a plan to develop more than 1,200 hectares for contract farming to supplement the supply and link smallholder farmers to high-value markets.

The firm has also a new fruit-processing facility with state-of-the-art processing, sterilization, and packaging equipment which became operational in November 2010. The processing unit has the capacity to produce six tons passion fruit juice per hour. The current capacity utilized is estimated at about 25 percent and there is a plan to reach full capacity in the coming two to three years. The company has been exporting yellow passion fruit juice to the European markets since the establishment of the processing unit. However, its strategic plan is to supply export markets in Europe and the Middle East and regional markets with tropical fruit juices, purees, and concentrates. Some fruits and vegetables such as papaya, tomatoes, and green chilies are produced for local markets.

**Passion fruit contract farming scheme**

Apart from its nucleus estate plantation, the company has a plan is to develop a large-scale passion fruit out-grower scheme by involving the local farmers in a win-win approach. In this case, the company has developed the “Out-grower Incubator Project” which has been co-financed by ICCO of the Netherlands.
GIZ of Germany, and the Rabobank Foundation. This project was launched in 2009. The goal of this project is to develop and support over 1000 hectares of out-growers organized as cooperatives, to increase the supply of fruits to the processing facility and enhance community participation. It is believed that the project entails several advantages to smallholder farmers in the area. It promotes production technology transfer to smallholders since yellow passion fruit is a new crop, introduced by the company, and creates market linkages and stable farm income. The out-growers also benefit from fair trade certification by having access to fair trade premium.

The company has followed different approaches to establish its passion fruit out-grower scheme. Prior to the actual implementation of the scheme, a baseline study was conducted to generate basic information including cropping pattern, income sources, and marketing issues. Initially, the company tried to establish its out-grower scheme with farmers who had access to irrigation. This approach failed immediately due to the farmers' wrong perception that their land could be taken by the government as part of project expansion. In addition, those farmers were already engaged in the production of other vegetables that have high demand in the local markets. Farmers were also skeptical about the outcome of the new technology, i.e., passion fruit production.

To overcome this problem, the company opted for those communities who did not have irrigation facilities. Great efforts were made to convince some innovative farmers to become out-growers. Finally, an agreement was reached that farmers would engage in contract farming while the company would establish and supply irrigation facilities to those out-growers who never had irrigation access. The establishment of the irrigation facilities was financed by the Out-grower Incubator Project. Initially, 15 smallholder farmers covering about 14 hectares were involved in the scheme. To date, 52 smallholder farmers on 66 hectares of land are engaged in contract farming activities in passion fruit production. The plan is to reach about 600 hectares in the next two to three years.

The nature of the contractual arrangement involves a formal agreement between the out-growers and the company for an average of three years. The formal contract is written in both local languages and English. MoA and Federal Cooperative Agency are involved during the contract agreement to build trust.
on the farmers’ side and create an enforcement mechanism. The company uses farmers’ group approach to manage its contract scheme. The first contractual agreement between the company and a cooperative was signed in March 2012. Currently, the out-grower scheme is functioning with one cooperative. The company envisions involving the surrounding community through farmers’ organizations or cooperatives as shareholders by allocating 5 percent of the stake. This will create a sense of ownership and enable the local community to take the lead in their own growth and development.

The contract involves the provision support services such as free seedlings, fertilizer, and training on quality and agronomic practices (pollination and crossing, pruning, weeding, etc). Since the plant is self-sterile, it requires manual crossing. The company’s staff provides extension services. One outreach worker on average manages to serve about 50 hectares. The contract also involves the provision of finance (kind) on initial investment, which has been estimated at about 12,000 Birr per hectare. The loan repayment schedule is three years. The key informant survey indicated that the actual initial capital outlay for passion fruit production is estimated to be 24,000 to 25,000 ETB. However, about 50 percent of the actual investment is covered by the Out-grower Incubator Project (sponsored by GIZ, ICCO, Rabobank Foundation, and Africajuice). The contract stipulates an irrigation fee of 500 ETB/hectare/year to be paid by farmers for pumping services. The company provides transport service for products from collection centers located nearby farmers plots to its processing unit.

The pricing mechanism is based on the minimum global fair trade price. Thus, farmers do have the advantage of a fair trade premium, which could be used for community development activities. It was noted that the pricing mechanism is transparent involving farmers’ groups, cooperative agencies, and fair trade representatives.

The payment schedule is influenced by the nature of the passion fruit production. Passion fruit plants take about 10 months to give the first harvest and once harvesting has commenced, it lasts throughout the year on a daily basis except for a period of two to three months. In the scheme, there are three market days in a week and payment is made at the end of each month. The average productive life of the passion fruit is about five years.
The project could be identified as a successful contract scheme for creating the following economic advantages to farmers:

- Passion fruit out-grower farmers can earn on average 90,000 Birr per hectare which is a big income in a smallholder community; and

- Since passion fruits grow on a trellis system, farmers can practice intercropping with their food crops and other vegetables (such as onions, tomatoes, and beans) between rows by using the new irrigation system.

Another success indicator of the project is that there has never been any farmer default. Of course, for the time being, the company has a full monopsonstic advantage because it is the only company in Ethiopia that handles passion fruit production. There is no alternative market. The company has attracted the attention of big global companies such as Coke and Pepsi. These companies reportedly demand of about 500,000 tons tropical fruit juice.

The following major problems were reported in passion fruit production:

- There is a high maintenance cost for lattice poles due to termite problems in the area. It was noted that the eucalyptus lattice pole is very expensive and sensitive to termite damage. However, efforts are being made to use alternatives such as low land bamboo poles that are 30 percent cheaper than eucalyptus poles. Currently, some 15,000 poles have been ordered for use; and

- Passion fruit production is a labor-intensive activity, which means high labor cost for routine activities such as pruning, crossing, irrigation, and picking fruits.

15.6 Haricot Beans

Context
Ethiopia is one of the top 10 major haricot bean exporting countries in the world though its market share is still very low at around 1.6 percent (FAOSTAT, 2012). The major haricot bean exporting countries include China (27.3 percent), Myanmar (18 percent), US (12 percent), and Canada (8.6 percent). The annual haricot bean production in Ethiopia is an estimated 330
thousand tons on 267,070 hectares (CSA, 2009a). It accounts for 17 percent of the total pulse production in the country. Haricot bean is mainly produced in the rift valley areas of the country especially in Oromia and SNNP Regional States which together account for about 85 percent of the total production. Smallholder farmers predominantly produce haricot bean and the commercialization level is very low. Estimates show that nearly 70 percent of the total haricot bean production is used for household consumption while only 16 percent is used for cash purposes (CSA, 2009c). Different haricot bean types are produced in Ethiopia such as red beans, speckled beans, and white beans. The red beans are typically grown for food consumption while white beans are produced almost exclusively for export markets.

Despite the limited commercialization in the sector, haricot bean is the major agricultural export commodity in Ethiopia next to coffee, sesame, and horticultural crops. It accounts for 33 percent of the total pulse export earnings (NBE, 2010). In addition, some 2.5 million smallholder farmers are engaged in haricot bean production (CSA, 2009a). Thus, the employment contribution along the value chain is quite significant.

**Trade regulation within the ECX framework**

Similar to the case of sesame, the Transaction Regulation No. 178/2010 mandates that haricot beans (white pea beans) trading in Ethiopia shall be conducted only at primary transaction centers and the Ethiopian Commodity Exchange (ECX). Similarly, the trade regulation maintains the rights of producers to directly export haricot beans either individually or through their cooperatives provided that the crop is produced from their own farm. According to the mandatory trade regulation, all haricot production in Ethiopia must be traded through ECX. Therefore, the use of contractual arrangement as an alternative vertical coordination mechanism in haricot bean production and marketing is not compatible within the framework of this trade regulation.

**Haricot Bean Contract Farming Schemes: Prior to the trade regulation (2010)**

**ACOS Ethiopia**

ACOS Ethiopia is an export company that was established in 2005 and has been operational since 2006. The company is part of a global supply network based in Italy. It is engaged in the export of haricot beans, chickpeas, lentils, and other pulses. However, haricot bean is the major export commodity of the
company. It has a modern state-of-the-art processing plant in Adama, which is located near the haricot bean production belt areas. The major export markets include Europe, US, South Africa, the Middle East, Pakistan, and India.

The company has been actively involved in a public private partnership (PPP) in agricultural research and development issues. It collaborates closely with the Ethiopian Agricultural Research Institute in pulse research programs. It has introduced different market preferred pulse varieties for studying their adaptation and best agronomic practices. For instance, one improved kabuli chickpea variety has been released in Ethiopia with the name "ACOS Dubie," which is a large-seeded variety for export market. It has also introduced different beans varieties that have good export markets.

ACOS Ethiopia had a haricot bean contract farming scheme during 2006-2008 with the intent to have a centralized model. The scheme was based on a formal contractual agreement between farmers' cooperatives and the company. In the agreement, farmers would have a guaranteed market while the company would have a dependable supply based on quantity and quality specifications. There were also few contract cases with individual farmers. About 1000 smallholder haricot bean farmers were involved in the scheme. The contracted haricot bean varieties were red dark kidney beans (early maturing variety) and white beans. The scheme covered Shashemene area, Areka, Meki and Ziway areas in collaboration with CRS (Catholic Relief Service), and west Hararghe areas.

The contract stipulated the provision of support services such as input credit (seeds), technical support, and packaging materials (sacks). The contract provided a guaranteed market and a flexible pricing mechanism in which prices were determined at a 10 percent premium over the current price. Different stakeholders such NGOs like CDI (Center for Development Initiative) and SNV were involved in the scheme in facilitation and training of farmers on contract farming as a business model.

Despite all the efforts, the scheme failed in 2009. The following problems were reported to be the major factors that contributed to the failure:

- Most of the farmers were found to be defaulters. Farmers failed to supply the amount and quality specified in the contract. The company was not
even able to recover its initial seed supply. The default incidence was much higher in those farmers who were approached through their cooperatives;

- Farmers did not treat farming as a business, and became dependent on the ACOS;

- Lack of enforcement mechanisms; and

- Lack of support from the government, i.e., no clear policy and guidelines on contract farming arrangements in Ethiopia.

**Soreti International Trading Company**

Soreti International Trading Company, one of the major agricultural export companies in Ethiopia, was established in 2005. The company engages in the export of Ethiopian agricultural commodities, mainly pulses and oilseeds. Its main export markets include China, South Africa, UAE, Pakistan, India, Turkey, US, Mexico, Saudi Arabia, Holland, Italy, Bulgaria, Romania, Germany, and France. The company has a modern processing unit for its export commodities.

Soreti International Trading Company had a haricot bean contract farming scheme as a pilot project in Adami Tulu areas of East Shewa Zone from 2006 to 2007. The company tried to establish a contractual arrangement with both smallholder farmers and private commercial farms. The contracted haricot bean varieties included red beans, speckled beans, and white beans with the main objective of supplying the export markets.

The contractual arrangement with smallholder farmers was a formal written agreement stipulating the provision of inputs credit (seeds), technical support (field supervision), and guaranteed market with a price fixed at 10 to 25 percent premium over the current market prices. However, the contract scheme failed. The major problems included farmer default due to side selling. They showed an opportunistic strategy by selling the product outside of their contract for minor short-term advantages in price.

Similarly, the contractual arrangement with commercial farms was a formal agreement specifying the provision of support services consisting of inputs credit (seeds) and finance for their liquidity problems. The pricing mechanism
was flexible and prices were determined with 10 to 20 percent premium over current prices that were derived from global prices, i.e. fob price at port Djibouti. Like the case with smallholder farmers, this contract scheme also failed. In this case, the major problem was the commercial farms did not deliver the amount and quality of product specified in the agreement. Moreover, finances were used for non-project purposes.

The following issues were reported as the major challenges in contract farming projects:

- Smallholder farmers often tend to have an opportunistic behavior due mainly to the high price fluctuations and the involvement of too many brokers (Delalas) in the marketing chain;

- Most of the high-value export commodities are traded within the framework of the newly established ECX. They are not allowed to be produced under contract farming arrangements;

- Lack of contract enforcement mechanisms. Contract enforcement through the legal system is too lengthy and expensive; and

- Smallholder farmers lack the understanding of modern agribusiness.

### 15.7 Cotton

**Context**

Cotton is an important industrial crop with a steadily growing demand in global markets. China, accounting for 25 percent of the world cotton production, ranks first while other major cotton producing countries include India (24 percent), US (17 percent), Pakistan (8 percent), Uzbekistan (5 percent) and Brazil (4 percent). These countries account for about 80 percent of global cotton production (FAOSTAT, 2012). Countries such as Burkina Faso, Zimbabwe, Benin, Cameroon, and Tanzania are the major cotton exporting countries in Sub-Saharan Africa although their export market share ranges from 1 to 3 percent. The main global cotton export destination markets are concentrated in East and Southeast Asian countries where the textile and garment industries are so vibrant and competitive. Despite being the leading cotton producer, China is also the leading cotton importer by absorbing
27 percent of the total world cotton import. Other major cotton importing countries include Turkey (12 percent), Indonesia (9 percent), Pakistan (7 percent), Thailand (6 percent), and Bangladesh (5 percent) (ibid.).

In spite of the potential to be among the major cotton producing countries, the performance of the cotton sector in Ethiopia has been very poor and lagging behind that of other export commodities such as coffee and pulses and oilseeds. It is estimated that Ethiopia has about 2.6 million hectares of land that is agro-ecologically conducive for cotton production (EIA, 2010). However, current annual cotton production in Ethiopia ranges from 77,000 to 84,000 tons on total cotton acreage of 42,371 hectares (ibid.). This figure shows that the production level is very marginal compared to the existing potential of the country. In Ethiopia, cotton production mainly targets the local markets although there are limited export activities.

The integration of the cotton sector into the textile value chain has a major impact on poverty alleviation and economic growth through creating substantial employment opportunities and income generation. The current five-year national development plan, the Growth and Transformation Plan (GTP) 2010/11-2014/15, targets the textile and garment industry as a key sector to increase foreign exchange earnings of the country. The GTP established the goal to generate 1 billion USD foreign exchange earnings from the textile industry and increase the gross value of textile production to 2.5 billion USD by the end of 2014/15 (MoFED, 2010). The sector has also been targeted to generate about 40,000 job opportunities during the planning period. The government of Ethiopia, as part of its commitment to the textile sector, has established the Ethiopian Textile Industry Development Institute (ETIDI) in 2010.6

It is strongly believed that the enormous export growth potential of the textile industry heavily depends on the performance of local cotton production. Hence, cotton production is a high priority in the development agenda. State farms, private commercial farms, and smallholders produce cotton under rainfed and irrigated conditions by. Although data on cotton production are inconsistent and often confusing, the official data from CSA (2011) showed that about 82,470 metric tons of raw cotton are produced annually from 40,367

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6 ETIDI official website: http://www.tidi.gov.et
hectares by large- and medium-scale commercial farms in Ethiopia. However, figures showing the contribution of smallholder cotton production are lacking. Cotton is extensively produced in the lowlands of Ethiopia under large-scale irrigation schemes. Irrigated large-scale commercial cotton plantations are commonly found in the Awash Valley. Other commercial farms in Humera, Bilate, and Arba Minch areas are based on rainfed farming. Still, there is a huge potential for the expansion of cotton production especially in areas such as the Omo-Gibe, WabiShebelle, BaroAkobo, Blue Nile, and Tekeze River basins (EIA, 2010).

Cotton contract farming experience

Contract farming is commonly used in cotton production in both developing and developed countries such as Zimbabwe, Ghana, Vietnam, India, and US (Eaton and Shepherd, 2001; Woodend, 2003; Ahn, 2004; McDonald et al., 2004). In Ethiopia, similar to other agricultural commodities, there is no evidence in the literature indicating the status of contracting farming in the cotton sector. However, a report by USDA (2012) indicated that the government of Ethiopia (MoA) in an effort to achieve the GTP targets is encouraging more smallholder farmers to engage in cotton production through a special 20 million USD credit line. Cotton farmers can access the credit facilities through cotton contract farming arrangements with local textile industries. The details of the provisions are not known except that loans are to be paid back after output sales are received.

A key informant survey was conducted in North Gondar involving commercial farmers who are actively engaged in cotton production to identify any possible contractual arrangements. It was found that farmers normally depend on spot markets and have never had experience with contractual arrangements in cotton production. Furthermore, the key informants classified farm size into small (7-10 hectares), medium (50-100 hectares), and large (>100 hectares) based on their experience and perceptions. It was also indicated that sesame and sorghum are major crops produced in the area in addition to cotton.

From the key informant survey, the following were reported as the major constraints in cotton production:

- Marketing problems, particularly low cotton price, that are attributed to cotton export ban. The declining cotton price was emphasized as the
major problem in cotton production. It was reported that cotton priced declined from, on average, 25-27 Birr/kg in 2010/11 to 9-10 Birr/kg in 2011/12. It was also noted that the government promised that cotton would be sold 40-50 Birr/kg and arrange access to finance from development bank. Here, it should be noted that this survey was conducted a few days before the ban was lifted in April 2012. This survey refers to the situation before the ban has been lifted. The cotton export ban was imposed in October 2010 with the major objective of expanding domestic textile production and avoiding possible supply shortfalls. In addition, world cotton prices were also very high. As an incentive to cotton farmers, the government promised that cotton would be sold in local markets at international prices, adjusted for freight and transportation costs (USDA, 2012). Initially, the cotton price was set at 42.78 Birr ($3.21) per kilogram in November 2010, and then it was increased to 57 Birr ($3.43) in February 2011. However, soon after a significant fall in world cotton prices, the price cap on cotton was removed in August 2011 (ibid.). The introduction of cotton price incentives resulted in a considerable growth in Ethiopian cotton production. Yet the demand for cotton by domestic textile industries was found below expectations and consequently excess supply was created in the local market. Hence, the export ban was officially lifted in April 2012. Currently, MoA, National Bank of Ethiopia, and ETIDI closely monitor the cotton trade to make sure that Ethiopian cotton export prices are in line with the prevailing global cotton prices.;

- Lack of access to finance services. The costs of cotton production have been increasing significantly over the past few years. There is a liquidity problem to finance some farm operations. Cotton is a labor-intensive crop demanding more labor from land preparation to harvesting. In addition, other inputs such as seeds (40 Birr/kg) and chemicals (420-520 Birr/liter) are also becoming very expensive.; and

- Cotton production is entirely based on traditional methods of production. In general, there is lack of technical backstopping in cotton production.
15.8 Beef Fattening

Fattening (Feedlots) in Adama (Nazreth) areas

In order to identify contract arrangements used in the beef fattening sector, a key informant survey was conducted in Adama, the commercial feedlot belt in Ethiopia. During the fieldwork, it was very difficult to find a collaborative key informant engaged in the beef fattening business who was willing to participate in the interview. The main reason could be due to the fact that most of the feedlot businesses are based on traditional and informal ways and there is a fear that information could be used for taxation purpose or could reach other market rivals. Finally, two key informants were found for the survey work. Both of them were fully collaborative in sharing basic information of the sector.

It is estimated that there are a total of about 260 commercial feedlots with an average capacity of 500 cattle in Adama that are mainly targeting the export markets. The major export markets for live animals include Yemen, Oman, Bahrain, Kuwait, Egypt, Beirut, and Turkey. The export market demands young cattle that are not castrated in order to have quality lean meat. In this case, the fattening process will be a very short two-month period. For export purpose, the average cycle is four per annum. In contrast, the local market demands castrated cattle with marble fat and the fattening process takes on average about six months. The major sources of livestock supply for commercial feedlots are the lowland pastoral areas such as Borena (Yabello), Somalia, and Elkeries. Cattle is purchased both directly from pastoralists and local traders. It was noted that transactions with suppliers in the lowland areas are entirely based on trust that has been built on a social network. This serves as a barrier to engage in this sector.

The major feed sources include roughages such as tef and wheat straw in the highland areas such as Minjar, Ada, and Lume-Ejere. The contribution of grass hay is very limited due to high costs. However, as a supplement, it is sourced from Koka areas. Feedlots mainly use their own feed formulation using cotton seed, maize, and seed coats of faba bean and lentil. The major seed coats of lentil are used in Beki and Sendafaddfaba bean coats are used in DebreBirhan.

The key informant survey confirmed that there are no contracts farming arrangements in commercial feedlots in the study area. All feedlot economic activities are based on spot markets.
The following issues were reported as the major challenges in the feedlot business.

- Lack of market information on potential markets. Thus, production decisions are not based on reliable market information;

- Monopsony problem in some regional export markets. For instance, Egypt is a potential market for Ethiopian beef but currently there is a single buyer. It would be better if more importing Egyptian companies are participating in the market;

- The current high feed cost challenges the competitiveness of the livestock export. For example, it was reported that the average daily feed cost is 35 Birr while the price of cattle is 25 Birr/kg. Yet the average daily weight gain is estimated between 1 - 1.2 kg; and

- Lack of access to land for feed production purposes.

16. Conclusions and Recommendations

Contract farming has been widely used in many developing countries across Africa, Asia, and Latin America due to the ongoing agro-industrialization and globalization processes. It has evolved as an institutional arrangement to serve the interests of both the producers and agribusiness firms. Smallholder farmers with contractual arrangements generally have two potential advantages which otherwise would not be achieved. First, they have access to emerging and growing high-value global markets despite potential barriers arising from the rapid expansion of global retailers (supermarkets), the use of private grades and standards, and the application of strict quality and safety regulations that need vertical coordination of different stages along agricultural value chains. Secondly, smallholder farmers have the opportunity to manage constraints such as lack of information, finance, and risks that limit their participation in the commercialization process. Contract farming enhances the productivity of smallholder farmers by introducing improved farming practices through the provision of inputs, credit, extension services, and other support services. It also brings investments and technical expertise to the smallholder sector. In

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USAID-CIAFS Contract Farming
the process, the agribusiness firms are able to ensure sustainable output supply according to agreed quality, quantity, and price.

Currently, contract farming is widely recognized as an institutional arrangement that promotes the commercialization of smallholder agriculture and poverty alleviation in developing countries. Contract farming facilitates crop diversification through a shift from traditional low-value crops to high-value crops for niche local and export markets. Those schemes that involve labor-intensive and high-value crops for niche markets have an especially significant impact on poverty. As a coordination strategy, it enhances the growth of the agro-processing industries to add value to primary products and it improves the capacity to meet stringent trade requirements of export markets. Furthermore, contract farming provides a strategic option to attract Foreign Direct Investment (FDI), specifically transnational corporations in agriculture that can have significant impact on the economy in terms of income, employment, poverty alleviation, and technology transfer.

In view of the potential benefits, contract farming holds much relevance to Ethiopia in the context of the current Growth and Transformation Plan (GTP) (2010/11-2014/15). During the GTP period, the economy is expected to grow at least 11.2 percent per annum while poverty is expected to fall from current levels (29 percent) to 22 percent by the end of the planning period. Promoting foreign exchange earnings is also the major target and it is expected that the total export earning as a percentage of GDP will reach 22.5 percent from the current level of 13.6 percent. Within the framework of ADLI, the current development plan still maintains agriculture as an engine of economic growth via domestic and global trade, but more emphasis is given on involving smallholder farming and large private commercial farms in the commercialization process.

There is a fundamental shift to the production of high-value crops during GTP. In order to increase the income of smallholder farmers, they are encouraged to shift gradually from the production of low-value to high-value agricultural products, depending on geographic location, the existence of a favorable market, and infrastructural factors. In this case, the significance of out-grower schemes to link smallholder farmers with high-value market has been acknowledged by GTP. Further strengthening of ECX and the promotion of
farmers’ cooperatives are also strategic tools for facilitating the commercialization process.

The private sector is encouraged to invest in agriculture in lowland areas where extensive farming could be practiced. Moreover, in the highland areas, private investment will be targeted with high-value export horticultural products that can be produced on limited land using abundant labor. It is expected that such investments will be integrated with smallholder agriculture through contractual arrangements in order to provide access to guaranteed and sustainable markets for smallholder farmers.

Contract farming schemes are implemented in different structural arrangements depending on the objectives of the project and the nature of the commodity. The productions of some industrial crops such as sugar, tea, rubber, oil palm, cotton, and tobacco, which tend to be produced on large estates at lower costs are appropriate for nucleus models involving contract farming in the form of out-grower schemes. The nucleus model normally demands huge investment costs that require the support of donors such as the World Bank. In Ethiopia, the nucleus model is recommended for areas where large commercial farms are predominant.

The other contract farming model is the centralized model which is commonly used for the production of high-value export commodities such fruits and vegetables. These schemes are often managed by the private sector. The investment costs range from moderate to high, but in most cases, they are relatively moderate compared to the nucleus models. In this case, a large number of smallholder farmers are involved and the agribusiness firm provides quality control, brand names, and marketing channels. In Ethiopia, this model is recommended for the production of high-value crops in areas where land is relatively scarce but labor is abundant. A variation of the two models is the multipartite model, which is often established as a joint venture between the public and private sectors. The multipartite model can function as either a nucleus or centralized model. Given the limited experience with contract farming in Ethiopia, this structure is recommended because the public sector has its own stake. Such arrangements also build confidence needed for foreign companies to invest in contract farming with smallholder farmers.

While contract farming has a vital role to play in facilitating the commercialization of smallholder agriculture in developing countries such as
Ethiopia, it is not a panacea for all smallholder agricultural production and marketing problems nor is it appropriate for all types of commodities. Hence, it should not be imposed or promoted across all sectors. It does make economic sense commodities in certain markets. Contract farming is appropriate in cases where the contractor is a large processor, exporter, or retail chain; the commodity is high-value, perishable, and/or not widely grown; and there is a destination market that is willing to pay a premium for quality attributes that cannot be obtained in spot markets. In general, contract farming as a business model is appropriate for high-value fruits and vegetables for quality sensitive markets and other major cash crops such as tea, cotton, sugar, tobacco, and oil palm. Contract farming is not recommended for food grains except agribusiness activities in the seed industry, organic agriculture, and barley for large breweries.

Recommendations

Based on the results of this report, the following recommendations have been drawn to promote the development of competitive and sustainable contract farming schemes that are beneficial to smallholder farmers:

Provide legal permission for direct transaction between farmers and agribusiness firms for ECX-mandated commodities through contract farming arrangements

Although the legal restriction is meant for protecting farmers’ interests, these regulations also impede the possibility of participating in high-value and niche markets where the price of commodities is higher than the normal market. Ethiopian coffee and sesame especially have the potential to serve high-value and niche markets. It is proposed that agribusiness companies be encouraged to invest in value chain development (contract farming) with smallholder farmers/cooperatives so that they could directly engage in niche markets. There should be control and enforcement mechanisms to ensure that farmers get higher price from niche markets as compared to the normal procedure in the commodity exchange.
Promote collective action

Contract farming schemes that are working with farmers' groups or cooperatives are more efficient than those contracting with individual farmers. Cooperatives or farmers' groups have an important role to play in the success of contract farming schemes:

- Reduces the transaction costs associated with dealing with a large number of smallholder farmers. A cooperative serves as a channel for the provision of important support services such as inputs, credit, technical support, and other services;

- Enables close follow up and monitoring of contract farming activities, especially the application of inputs and recommended management practices by the contracting company;

- Helps avoid side selling or farmer default through collective liability; and

- Enhances bargaining power of smallholder farmers in contractual arrangements.

The public sector plays an important role in the development of farmers' groups or cooperatives. Contract farming schemes should involve voluntary cooperative membership as well as voluntary contractual relationships with agribusiness firms to ensure that they are sustainable.

Promote Public-Private Partnerships (PPP) in research and extension

In contrast to subsistence agriculture, farmers in contract farming will engage in the production of high-value commodities that require technical assistance that is quite different from the normal extension program on food grains. With some flexibility and collaboration, the public extension program could support agribusiness companies in providing tailor-made and high-quality extension services to contract farmers. In addition, the agribusiness companies could have access to technologies that have been generated by public research institutes. The public research could also help private companies in testing and verifying new agricultural technologies introduced from abroad.
Promote Public-Private Partnerships in large investment projects
Contract farming also provides the opportunity to have public-private partnership in joint investment ventures. These partnerships are common in many developing countries in Africa and Asia. The multipartite contract farming models are good examples of a private foreign company investing in contract farming with smallholder farmers in joint venture with the government of the host country. These ventures are often found to be successful.

Empowerment of small-scale out-growers
There are some successful companies where contracted smallholder farmers are participating in decision making through their involvement as shareholders. Empowerment enhances the sense of ownership on the part of smallholders and promotes a long-term trust in business relationships.

Develop innovative private enforcement mechanisms
Enforcement mechanisms should be based on contextual factors. For instance, using the court as enforcement mechanism in Ethiopia is inefficient because court procedures are costly and time consuming. Possible enforcement mechanisms include contracting through the group approach and cooperatives, establishing an arbitration committee consisting of representatives of producers, exporters, government, and other stakeholders, and open communication and close monitoring.

Development of effective grades and standards for agricultural commodities:
The agricultural marketing system in Ethiopia is characterized by lack of grades and standards for commodities regulated by ECX. The establishment of grades and standards that are easy to implement and reflect market preferred traits will enhance communication and negotiation in contractual arrangements between smallholder farmers and agribusiness firms. It minimizes contract default from both parties. Agribusiness companies will not reject products that meet established grades and standards, especially if they have participated in developing such a system. On the other hand, contract farmers will strictly follow the recommended procedures to achieve the established grades and standards. The government may also have a role in certifying compliance with
private grades and standards, such as EUREGAP, fair trade, and organic for high-value markets.

**Create an enabling environment**
Contract farming schemes are normally investment projects organized by large-scale processors, exporters, or retailer chains (supermarkets). Thus, an enabling environment that facilitates private investment in agribusiness is a necessary precondition for the development of private contract farming schemes. The enabling environment includes investment and trade policies, contract legislation, provision of public goods such as roads or infrastructure, research, and other support services.

**Promote competition among agribusiness companies**
One of the common criticisms in contract farming is the fact that companies have much greater market power and leverage than the smallholder farmers who bargain with them. There are also incidents of monopsony in the market. One of the most effective approaches to limit the unbalanced power is to enhance competition among companies engaged in similar commodities. However, this scenario could also increase the incidence of farmers default. The competition makes it easier for farmers to obtain inputs and credit from one company and then sell the harvest to another company, thus avoiding repayment of the loan. In this case, effective enforcement mechanisms should be used.

**Provide arbitration services**
One of the major challenges in contract farming arrangements is contract breach due to opportunistic behavior. Both farmers and companies breach contracts. If market prices rise, farmers tend to breach the contract by side selling while if the market price falls, the company is tempted to buy its supply on the spot markets. If such breaches are widespread, they can lead to loss of confidence and possibly the collapse of the scheme. In this case, the government, particularly the bureaus of agriculture, and the private sector could have a major role developing arbitration alternatives for mediating conflicts between farmers and companies.
17. The Way Forward

The current development plan, GTP (2010/11-2014/15), maintains agriculture as a major source of economic growth through intensification of the commercialization process involving smallholder farmers and large private commercial farms. The GTP duly acknowledges the important role of contract farming for integrating smallholder farmers with high value markets. There is also a fundamental shift to the production of high value crops that are competitive in local and global markets. Thus, in order to enhance the commercialization of smallholder farmers leading to income growth and poverty alleviation, the government (MoA) has to play a vital role of creating an effective enabling environment for successful contract farming in Ethiopia. As a short-term intervention, the government with the support of development partners such as USAID could develop the following key elements of an enabling environment for the promotion of viable and sustainable contract farming in Ethiopia:

**Review the current legal framework related to contract farming and develop contact legislation using legal experts**

The results of this study showed that the experience of contract farming as a business model in Ethiopia is very limited and relatively a recent one. Therefore, there is no legally binding contract legislation that specifically regulates contract farming arrangements between smallholder farmers and agribusiness companies. One of the major challenges in contract farming arrangements is contract breach due to opportunistic behavior by both farmers and companies. Contract arrangements should be backed up by appropriate laws and an efficient regulatory system.

**Develop a code of conduct for contractual arrangements between smallholder farmers and agribusiness firms**

Legal contractual agreements are often breached due to lack of enforcement mechanisms. Therefore, there is a need to design and develop effective legal enforcement mechanisms of contracts between agribusiness companies and farmers.
Develop regulations on key aspects of contract farming arrangements

While over regulation is not desirable to business environment, the introduction of regulations in some critical aspects, such as the use of pesticide, food standards and safety, seed quality, and provision of arrangements for certification creates an effective enabling environment for contract farming. Regulations could also be applied to prevent monopolistic situations and protect contracting agribusiness firms that have invested in CF from opportunistic companies and traders that offer contracted smallholder farmers higher prices for not having invested in the scheme.

Finally, the following contract farming models have been developed for the respective commodities in Ethiopia:

**Category I: ECX Mandated Commodities (Coffee, Sesame, Haricot beans)**

A. Nucleus model
B. Centralized model

Note: OG = Out-grower; QTC = Quality and transaction control (MoA)

Figure 4. Proposed contract farming models for ECX mandated commodities

It should be noted that the two models could also operate in a multipartite form involving a joint venture between the public and private sector.

Category II: Industrial Crops for Local Markets (Cotton, Sugar, Tea)

Figure 5. Proposed contract farming models for industrial crops (Nucleus Model)
Category III: Commodities for Agro-processing Industries (Food and Beverage)
(Durum wheat, bread wheat, malt barley, etc)

Figure 6. Proposed contract farming models for agro-processing commodities
(Centralized Model)

Category IV: Seed Industry (Maize, Wheat, etc.)

Figure 7. Proposed contract farming models for seed multiplication (Nucleus Model)
Category V: High-Value Horticultural Commodities (High-value fruits and vegetables)

Figure 8. Proposed contract farming models for high-value horticultural commodities (Nucleus Model)
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*Farmers, seeds and varieties: supporting informal seed supply in Ethiopia*. 
The USAID-funded Capacity to Improve Agriculture and Food Security (USAID-CIAFS) project supports Ethiopia’s efforts to transform its agriculture sector and improve food security for Ethiopia. The project offers a bold approach to agricultural development, targeting Ethiopian agents of change in the public, private, and civil society sectors. By providing management, leadership, and entrepreneurship training, as well as raising awareness of international best practices in agriculture development, USAID-CIAFS strives to empower leaders to catalyze change, drive future growth and reduce poverty.

USAID-CIAFS conducts demand-driven analyses to improve the enabling environment for agriculture. The project’s interventions are aligned with Ethiopia’s Agriculture Growth Transformation Plan (GTP), and are implemented in collaboration with the Ministry of Agriculture and other public and government entities.

The project brings together government, the private sector, and civil society in public-private dialogues to enhance contributions to Ethiopia’s GTP through improved synergy. USAID-CIAFS also shares proven agricultural best practices through its Website, project reports, Tools for Transformation series and other channels. The project is implemented by a Washington-based agribusiness firm called Fintrac Inc.

In general USAID-CIAFS offers the following major services and products:

- Customized trainings
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- Monitoring and evaluation tools
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