

RESEARCH BRIEF

The Characteristics of Contract Farming for Farm Smallholder: The Case of Thailand and Lao PDR

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In recent decades, contract farming has been spreading rapidly within developing countries, although it has long been established in developed countries. Yet, contract farming has primarily tended to be a potential industry for economic development in both. Contract farming has accounted for 15% of agricultural output in developed countries, while in developing countries, it has been steeply increasing (Rehber, 2007). Contract farming in developed countries provides a consistent flow of raw materials to the processing industry, which are mainly formed groups of farmers contracting with private firms (Erkan, 2007). Meanwhile, in developing countries, contract farming is mostly the result of multi-lateral arrangements involving private firms (Glover, 1984) or is the result of many contractual relationships organized by different actors that is managed by complementing and partially replacing farm land and plantations (Erkan, 2007).

In addition, contract farming in the less developed countries of the Greater Mekong Sub-Region has been expanding rapidly in such a way that the contractor provides inputs and the farmers exclusively sell products to contractors at a pre-determined price (Sununtar, Pingsun, & Adam, 2008). In this context, contract farming in Thailand is approaching maturity nowadays. Glover (1984) emphasized that, of all the countries in Asia, Thailand has the most extensive experience in contract farming and is a key instrument for the Thai government's development. As a result, contract farmers are able to negotiate contracts with the best opportunity (Sriboonchittan & Wiboonpongse, 2005). Sununtar et al. (2008) showed that when compared to larger-scale producers, smallholder producers were more efficient and profitable.

Contract farming in Lao PDR was in effect from 2006-2009. The Lao government has encouraged foreign investment in the private sector under a contract

scheme of the sub-regional economic cooperation agreement called “Ayeyawade-Chao Phraya-Mekong Economic Cooperation Strategy” (ACMECS). The private foreign investors have a contract agreement with smallholder farmers to provide seed, technical services, as well as credit and marketing services. Contract farming in Lao PDR is similar to other Asian countries, such as Cambodia and Vietnam, in terms of poverty alleviation for smallholders under contract farming (Asian Development Bank Institute, 2004; UNIDROIT, FAO, & IFAD, 2015). In other words, contract farming is a key tool in transforming subsistence farmers to commercial farmers and in the reduction of poverty (Sununtar et al., 2008). A number of studies have determined that contract farming raised more reliable incomes and provided new farming skills (Glover & Kusterer, 1990; Fulton & Clark, 1996). Moreover, it has solved problems of information, investment, credit, and market risk for small farmers who have confronted commercial production. Thus, contract farming has developed and industrialized agriculture in both developed and developing countries (Erkan, 2007). However, firms have provided overly-priced services, low prices for products, delayed payments, and no compensation for natural disasters (Glover & Kusterer, 1990; Grosh, 1994; Singh, 2002) and this has led to higher risks, indebtedness, and income inequality (Little & Watts, 1994; Singh, 2002). From this viewpoint, it can be deduced that agricultural contracting in Thailand and Lao PDR has been discussed from various points of view and that it is important in maintaining the specific character of the family farm, especially with respect to the small-sized farms. Therefore, this paper aims to highlight the performance of contract farming arrangements and the problems encountered by the contracting agencies.

This research is based on a review of literature—on publication and studies, and on previous and updated field research studies and field surveys. In Thailand, the field studies were carried out in Khon Kaen and in Kalasin Province in the upper Northeastern region of Thailand in 2014. A total of 80 households were purposively selected, which consisted of sugarcane contract farmers. For Lao PDR, the investigation was based on previous empirical research that was

available from the Contract Farming: Sugarcane Growing in Suwannakhet District and fell under the project of trans-boundary Thai-Lao production. The data used for the study was collected between August and October 2012 by way of a questionnaire. The 110 farmers that were selected were chosen by random sampling from 11 out of the district’s 20 villages. Selections were made based on the advice of Lao government officials, which are Kumnonsung, Dongpung, Ganghat, Laowpai, Yangkam, Pakkaya, Namaung, Woungtai, Laowdogmai, Krajuck, and Nadang. Then, the data that had been obtained was analyzed and the descriptive statistics were calculated using the SPSS 11.5 statistics software.

Contract Farming in Lao PDR The Structure

Investments for the agricultural system known as “contract farming” were in effect between 2006-2009. This type of contract farming under the ACMECS is an agreement based on strategic planning for cooperation among Cambodia, Laos, Myanmar, and Thailand; and its aim is for each country to encourage private sectors to participate in their agricultural sectors or in the agricultural sectors of neighboring countries (Royal Thai Government, 2013). There is a cooperative plan involving two targeted areas: 1) The KhomMuang District in Thailand and 2) The Sawannakhet District in Lao. In 2007, there were several cooperative policies placed into action, such as an agricultural investment in sugarcane contract farming in the Sawannakhet District of Lao PDR. This production between company contractors and farmers is part of a promotion for cultivating sugarcane, which is called a (2+3) policy. The lands and the labor belong to the farmers, while the marketing, technology, and the costs are the responsibility of the company. From the survey, most of the farmers with average sized farms of 5.2 hectares have been associated with a study by Moore (1994). However, some studies have argued that the firms tend to work with medium and large scale farmers (Little & Watts, 1994; Singh, 2002).

It is obvious that sugar factories go into contact farming with smallholders to increase capacity and be able to control the quality and the processing. In addition, they can purchase sugarcane in large quantities (Sartorius & Kirsten, 2007). The farmers who have entered into this type of contract are approximately 48 years old, and began participating in contract farming in 2007. They participated in contract farming mainly because Thai middlemen offered the incentive that the farmers could borrow factors of production from the factory first and could then deduct the debts after selling the sugarcane back to the factory in the Suwannakhet District in PDR Lao (Table 1). The factory contracted with the farmers when the farmers expressed their intention of producing sugarcane with the factory. Later, the factory sent Thai contractors to carry out land reclamation and cane production. In principle, the farmers and the land leaders act as investigators for the

contractors' work. However, in reality it has only been the village leader who has checked the reclamation of land and sugarcane production. This was because most farmers did not pay attention and therefore, trusted the Thai contractors and village leaders to monitor the procedures. This resulted in Thai contractors working without any standards. Moreover, a zone leader is regularly assigned to oversee and monitor the land leaders (Figure 1). The processes involving the harvesting and transporting of sugarcane were made through the village leader who would give the farmers orders to cut. The village leader determined how the product was to be transported to the factory, which was by the factory's or farmer's truck. When the transportation was done by the factory, the cost was 13 Baht/kilogram, but when the farmer's trucks were used, the farmers would receive around 1,000 Baht per ton. Since 2011, the factory has allowed the farmers to just use their vehicles.

Table 1 *The Characteristic of Contract Farming in Lao PDR*

Items	Number	Percentage
Farmer who loss	80	79.5
Thai middleman	99	89
Company's guidance	59	52.6
Earning more income	39	35.1
Better living	63	57
More money from hired labor	80	71.4

Items	Sugarcane	Ratoon cane I	Ratoon cane II
Average yield (ton/ha)	52.89	13.10	2.95
Average income (Baht/ha)	42,918.99	10,615.27	2327.82
Average cost (Baht/ha)	65,981.18	9,491.30	5328.44
Net profit (Baht)	(23,062.20)	1,123.97	(2,955.62)
Averaged cultivated area (ha)	5.29		
Average cost of land reclamation (Baht)	8,200.21		
Average debt (Baht/household)	101,250		

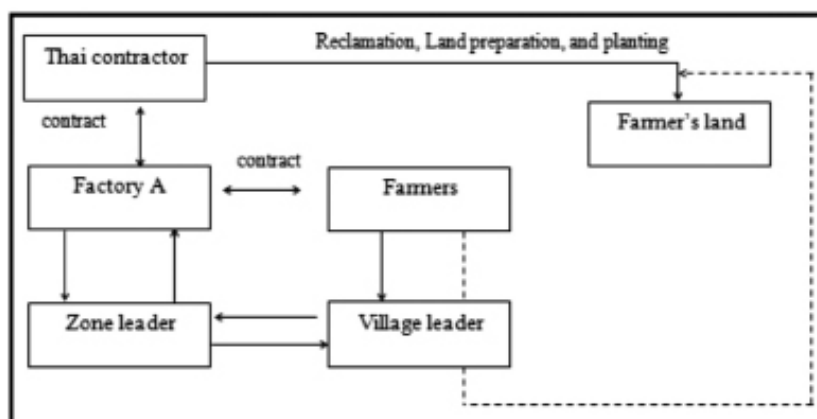


Fig. 1 The contract process in Lao PDR.

Impact to Small Farmholder Participating in the Contract Farming Scheme

In practice, sugarcane would be an alternative crop that could create income for farmers (Little & Watts, 1994; Singh, 2002). Yet, in Lao PDR, losses (79.5%) are incurred in the production of sugarcane and Ratoon Cane II (Table 1) and contract farming has had a negative impact on farmers' incomes (Glover & Kusterer, 1990). The major reasons why the farmers incurred losses are as follows: 1) a delay in payments and input delivery (Glover & Kusterer, 1990; Grosh, 1994; Singh, 2002), 2) the practice of growing sugarcane out of season, and 3) a lack of knowledge about growing sugarcane. Most of the farmers had thought that when they were participating in contract farming they would receive aid or care from the sugar factory. As a result, the farmers ignored the treatment, and they even allowed their pets to come and eat the sugarcane. The canes became diseased, and there were no soil treatments to increase soil fertility. Moreover, almost all farmers had had losses because of the numerous deductions that had been taken from the crop payments, which made it difficult for farmers to assess their profit positions, higher transaction costs, and their investments in credit. The factory also offered low prices and offered no compensation for loss due to natural calamities (Glover & Kusterer, 1990; Singh, 2002). In contrast, the average profit from growing Ratoon cane I is only 1,123.97 Baht/ha (Table 1)

because the farmers do not pay the factory for the seeds, the preparation costs, or the growing costs. The farmers who had profitably grown sugarcane followed the instructions from the company and some government agencies had come to offer suggestions regarding the production process, caring for the sugarcane, harvesting procedures, and other processes, including follow-up visits with the head of the land. Thus, the farmers were able to receive benefits, not only in income, but were also able to gain access to credit and technical knowledge (Minot, 1986; Little & Watts, 1994).

As a result, the farmers were able to improve their lives, and approximately 57% of the farmers involved in contract farming had better livings standards which is consistent with the results of Singh's (2002) study. The survey found that the farmers had more income and had also received several conveniences, such as transportation, bridge building, and financial provisions. In addition, many farmers (71.4%) were able to make more money from being hired in the community. Not only had contract farming increased rural infrastructure, but it had also increased rural employment which is consistent with the findings of Glover and Kusterer (1990), Baumann (2000), and Singh (2002). This income came from growing, cutting, and loading the sugarcanes.

However, some farmers were worried about the accumulation of debts because they had an average debt of 101,250 Baht/household. Yet, others felt relieved since it was a long term debt payment (Table

1) because farmers previously have no access to credit at all (Glover & Kusterer, 1990; Hayami & Otsuku, 1993). Agricultural input and credit provision from the factory had contributed to an imbalanced use which had led to the accumulation of debts as mentioned by Eaton and Shepherd (2001) and Glover and Kusterer (1990). The factory supports the farmers by loaning input production, such as providing seeds, fertilizers, and chemicals. The expense will be deducted from the products that the farmers sell to the factory, which is consistent with Key and Runsten (1999). The outstanding debt are from: 1) the land reclamation which costs about 117,000 Baht/ha and 2) the number of cut sugarcane for planting was one ton given by the factory and the farmer will return 1.5 tons to the factory that farmers used it approximately 10 ton per hectare.

There is inadequate technology in that the company does not have enough tractors and harvesters for the numbers of farmers who are participating in the project. This can cause delays in production and harvesting, and the farmers cannot send the produce to the factory on time. The crops also do not yield the amount and quality of product that the company requires which leads to lower prices. However, the farmers have greater access to market, as mentioned in Glover and Kusterer (1990) and Eaton and Shepherd (2001), and also have a transportation service from the factory which reduces the risk of production.

Risk of Contract Farming in Lao PDR

The risks of production are that many farmers lack knowledge and understanding about growing sugarcane. Since many of these farmers have never grown sugarcane before, they are at risk of not finding suitable land having the appropriate weather conditions. These factors can lead to reduced quality and quantity of sugarcane production, and can cause lots of debts arising from the factory loans.

Regarding transparency in the production process, the factory's operation is inefficient, specifically because the head of the land and the contractor are used to prepare and harvest the land. Every step of

authority has the potential for corruption. Therefore, the farmers are at risk of increased production costs and unsuccessful sugarcane production. It also is a monopoly trade because in Suwannakhet District there is only one sugarcane factory.

Moreover, the delay in technology can affect the quantity of production. Some farmers also do not grow their produce in the right season and this can cause delays in harvesting. The production expense might increase for the farmers because the sugarcanes for planting, given by the factory, are withered and cannot be grown. The factory also cannot separate the various species of sugarcane to determine whether they can be grown or not since they are imported from Thailand. Any delay in transportation affects the weight of sugarcane. Thus, the diversification of risk is that the factory distributes some risks to the farmers, such as the burden of production errors. The conditions on the farms are that the land is mostly wilderness, the terrain is rocky, and the soil is unfertilized leading that the factory has chosen farmers with more fertile land and also, larger farmers are more likely to be attractive to partners (Little & Watts, 1994).

Sugarcane Contract Farming in Thailand

Most farmers were, on average, 52 years of age. The main reason for joining contract farming was the actual market and price for production sale, which was followed by a good income similar to the study of Fulton and Clark (1996) and Warning and Key (2002). It was found that almost all of the farmers cannot only get a better income (over 96%), but can also finance supporting credit (over 50%) that is worth the investment. This source of income is derived in two different ways: from the total yield and from the quality of the sweetness (CCS). Half of the farmers already have a contract period of 5-10 years while 43% of the farmers have a contact period of less than five years. Most of the sugarcane farmers (73%) have been advised to undertake contract farming through the encouragement of company employees while neighboring farmers encouraged another 10% of the contract farmers (Table 2).

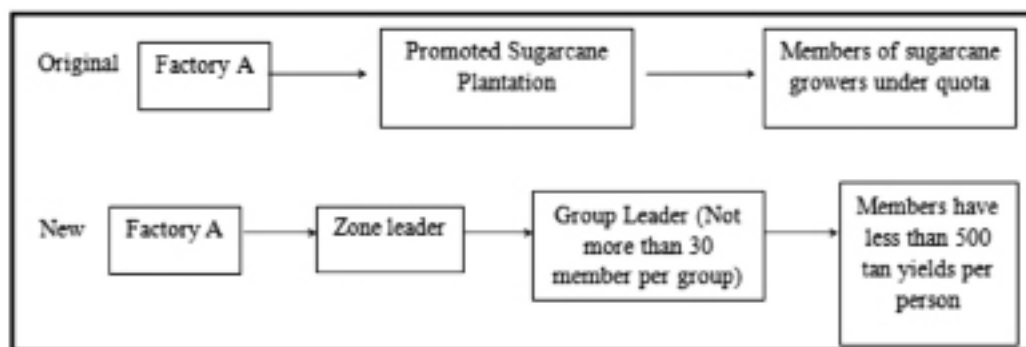


Fig. 2 *The original and sugarcane contract farming.*

Under the original contract, each farmer has to produce at least 50 tons per harvest of sugarcane. Farmers can obtain the necessary materials from the factory and learn more advanced agricultural technology and investment in sugarcane production at very low interest rates. If the contract requirements are not met, the farmer is fined 20 baht for every ton under the weight that had been agreed upon. Should they exceed the agreed upon amount, they will be paid ten baht per ton. For the original contract, the sugarcane factory purchased the sugarcane from farmers and also provided harvesting materials, funding, sugarcane processing, and agricultural technology for farmers. Presently, the head of the village, the group leader, is the coordinator between the factory and the farmer, relays information on the purchase price and the amount of production capacity and quota for each month, and serves as a representative at joint meetings. The leader is also responsible for transferring knowledge to farmers, such as the price and the CCS sweetness rates, and so forth. For each meeting, the group leader will receive 1,500 - 2,000 baht in compensation, depending on the number of members in the group (Figure 2).

Moreover, sugarcane growers, who grow sugarcane under agreement with a factory, have special consideration for the grade of the farmers. For example, farmers who are able to bring sugarcane into the factory according to the quota or over the quota will get various special rights, and the factory itself will give the farmers Grade

A, B, C, or D. Grade A farmers are those who are able to bring over sugarcane into the factory in response to the factory's requirements. These are a special level of farmers who are considered before the other grades of farmers or who are supported by the factory more than the other groups. Grade B farmers are those who are able to bring sugarcane into the factory consistently according to the specified quota. It is at this level that they can be considered for loan grants—investment money, agricultural equipment, means of production, and so forth. The factory puts those farmers into group C who are open to a new quota. Grade D farmers are of low grade because they are not able to bring sugarcane into the factory according to a quota and are judged as members. Under environmental protection policies, they withhold funds from farmers who bring in burnt sugarcane to the factory and share the profits taken with farmers who bring fresh sugarcane to the factory to support farmers cutting more fresh sugarcane. This is done to reduce global warming and is a part of a campaign to make farmers cut less sugarcane that has been burnt. The factory has a policy to encourage growing sugarcane in an orderly manner by paying as follows: 1) a small tractor equals to 50 Baht/ton, 2) six-wheeled vehicles = 100 Baht/ton, and 3) ten-wheelers equal to 200 Baht/ton. Moreover, the factory serves by distributing molasses for a charge of 3,000 Baht for ten-wheelers or about 18 x 1.5 tons for a charge of 3,500 Baht.

Impact of Contract Farming on Farmers in Northeast

The revenue averages at about 10,580.04 Baht/ha for sugarcane followed by Ratoon Cane I, which averages at 17,846.76 Baht/ha, while the Ratoon Cane II averages at 17,528.58 Baht/ha. It can be observed that the real profits are in ratoon cane. Ratoon cane is not costly to prepare for production. The ratoon cane can be harvested more quickly and has a yield of not less than 10 tons/ha. Furthermore, 82% of farmers gained the higher income as noted in the studies of Glover and Kusterer (1990) and Birthal, Joshi and Gulati (2005). Yet, 5% explained that their reduced incomes were due to drought. Almost all of

the farmers reported that they had fallen into the cycle of debt with average of 252,300 Baht and this was consistent with the findings of Little and Watts (1994) and Singh (2002). Moreover, farmers are assured of having markets for their products at around 71% as similar to findings by Sartorius and Kirsten (2007). More income is not only yielded from sugarcane, but also from the sweetness value or CCS which can give the farmers an increase in incomes (88%). Farmers receive loans and investment money in addition to transportation which is supported by the factory with interest rates that are lower than the standard and with various agricultural technologies around 54% (Table 2). This is shown to be consistent with Singh (2002), Glover and Kusterer (1990), and Fulton and Clark (1996).

Table 2 *The Characteristic of Contract Farming in Thailand*

Items	Number (n=100)	Percentage
Farmer who profit	82	82
Company's guidance	76	76
Finance support	54	54
Better living	96	96
Actual market	71	71
Income from CCS	88	88

Items	Sugarcane	Ratoon cane 1	Ratoon cane 2
Average yield (ton/ha)	57.18	51.18	44.04
Average income (Baht/ha)	59,184.72	52,722.06	42,102.24
Average cost (Baht/ha)	48,604.68	34,875.30	24,573.66
Net profit (Baht/ha)	10,580.04	17,846.76	17,528.58
Average of cultivated area (ha)	7.63		
Average of cultivated area (ha)	252,300		

The Risks of Contract Farming in Thailand

Although the contract is income insurance, the stability of the market, according to Glover (1984) and Cai, Ung, Setboonsarng, and Leung (2008), does not guarantee other risks, such as climate, sweetness, and quality throughout the process which can affect the price. If the climate is in a period of drought, it can impact the yield, reducing it up to 60% (Robertson,

Paul & Harwood, 2000). An adequate amount of water is required by sugarcane plants because under surplus water the root of sugarcane stops to vacuum nutrients, water and oxygen leading to stop the growth of sugarcane. Therefore, water is the main factor contributing to plant growth. Additionally, the queue to deliver sugar cane to the factory can take approximately 10-12 hours to complete delivery and as a result, the delivery is delayed. This factor affects

the standard sweetness of commercial cane sugar (CCS) and maintaining the quality of the cane sugar is a major problem faced by farmers. Disease and insect problems also contribute to a decline in quality and the burning of sugarcane is another important issue. Burning diminishes the sweetness of the sugarcane and due to the diminishment of the sweetness; ten baht/ton will be deducted. However, there are some farmers who choose this option because of lack of labour. The queues create a waiting period into the factory and this delay leads to a drying of the sugarcane and a resulting loss of sweetness, as well as a decline in the quality of output.

As above mentioned, it is obvious that contract farming would be beneficial to farmers in both countries through easy access to product market, technical assistance, credit and information on extension, and marketing which is similar to the study of Key and Runsten (1999) and Minot (1986). It also reduces the risk of fluctuations in the price of production. However, contract farming typically fell more like the farmers are mere laborer in their farmland; in other words contract farming is a form of slavery contract especially in Thailand (Isan Alternative Agricultural Network, 2008). Moreover, smallholders have limited strategies for managing risk that firm passed on the risk to the farmers did not provide compensation for natural calamity loss especially in Lao PDR, which is similar to the study of Grosh (1994) and Singh (2002).

Therefore, contract farming causes a number of problems for farmers, such as the use of unfair contract terms, the risk in production and the debt resulting from the investment in terms of inputs and process manufacturing. It has led many small farmers in both countries in servitude and promised to bear contract farming with the debt rotation system to reduce debt incurred. However, contract farming can be developed into an important mechanism to increase the production capacity for small farmers to access inputs, capital, and information of technology and markets compared to larger farmers. This condition leads small farmers to produce crops with a high value in a small farm to increase income and alleviate the poverty of small farmers.

Conclusion

Contract farming is a form of vertical coordination that can help the small farmers who need capital and technical assistance as well as those who need greater access to markets and to credit, especially the small holders in Thailand and in the Laos PDR. In other words, contract farming can be seen as a way of reducing production costs for firms and farmers. The contract farming in Thailand has been rather successful and has produced a more reliable income than in Lao PDR, although the farmers are still in debt. It is obvious that both government should provide better marketing information and play a greater role in supporting farmers who are participating in contract farming, especially in the areas of farm skills and farm knowledge through farm extension, as well as through farm credit in Laos PDR.

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