

**An Assessment of
Agriculture Business Models for
Farmer-Investor Innovative Farming in Cambodia:
Case Studies of Sugarcane, Cassava, and Rubber
Plantations**



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Executive Summary

This study assesses current agricultural business models under contract-farming schemes for three industrial crops, namely sugarcane, rubber, and cassava, to identify opportunities or challenges as well as successes or failures in contract implementation in Cambodia. We conducted household survey and interviews of ELC farms in the provinces of Preah Vihear, Kratie, and Monduliri. The observations show that there is potential for contract farming to grow, and farmers appear to have strong interest in formal contract schemes with private investment firms, including those ELC farms. However, both farmers and large-farms operated under ELCs have faced major challenges in bringing the farming contracts to be honored by both parties, including cases of confrontation and tension in contract implementation and growing distrust. On farmers' side, even with a written contract, they have faced with delayed payments for their land lease. Contracting firms reported that farmers have failed to abide by the written terms and conditions in the contracts. Despite the prevailing sub-decree on CF, there is no institutional and legal mechanism to enforce the contract and to settle disputes in contracts. To help promote agro-industries, welfares of smallholder farmers, and support the RGC's efforts to promote effective contract farming practices, this study provides the following policy options. First, establishing a legislation or legal foundation that empowers local and sub-national governments to enforce the contracts. Second, institutionalizing the supervision and enforcement of agricultural contracts and providing mechanisms for contract dispute resolution could be essential. Third, enhancing the capacity of local farmers in the process of contract making to contract implementation to contract dispute settlement will tend to minimize potential risks of breach in contract and would develop their trust in forging future contracts.

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I. Introduction

Successful contract farming practices in Cambodia appear to be rare. Formal contract farming, the one with a legally binding, enforceable contract, is an emerging concept in Cambodia, and there have been informal arrangements of contracts in farming between farmers and farmers, such as sharecropping or land lease in agriculture. In an informal contract arrangement, a household with a surplus of farmland, rather than leaving their land idle, may lease it to their peer farmers to cultivate or may share the crop harvest on an agreed proportion. Although records of its evidence is not available, informal, unwritten contract arrangements in agriculture in Cambodia could have been a common practice over the past millennia. Recently, formal contract farming has become a tool to help smallholder farmers link their agricultural operations to retailer stores, medium agro-industrial processing firms, or large-scale farms in one or more contractual arrangement models or schemes. In recent past decades, the expanded spectra of industrial crop production and the rising needs for agricultural land have pushed contract farming with smallholder farmers in Cambodia a potential platform for reinvigorating agrarian sector growth.

The Royal Government of Cambodia (RGC) has established a Sub-Degree on Contract Farming in 2011 to help farmers find markets for their agricultural produce and to promote agro-industry, which would tackle market failures for agricultural produce and promote Cambodian exports. The Sub-Degree has been laid out to support the National Strategic Development Plan (2014-2018) and RGC's Industrial Development Policy (RGC, 2015). It would provide an impetus to facilitate commercialization and modernization of agriculture through exchanges of management practices and technological transfers from large agricultural business establishments. According to the CF Sub-Degree, a form of contract farming refers to contract-based agricultural production that would ensure the quantity and quality of the produce in accordance with an agreement made prior to the production. The CF Sub-Degree designates an agricultural production contract (APC) as an agreement of agricultural production business (APB) conducted by two parties or more, which is legally binding and shall specify in advance any requirements demanded and accepted by contracting parties. An APB is any agricultural business that does the following:

- (i) cultivation of all kinds of crops,
- (ii) sericulture, arboriculture, aquaculture, animal husbandry, and so on,
- (iii) production of crop seeds, livestock breeds, aquatic animal species, and vegetation species, and
- (iv) agricultural produce processing, and contract-based agricultural production purchase to supply the markets for processing factories or for export.

Despite a seemingly important role of contract farming (CF) in agricultural sectors in developing economies, empirical research on the motivation of smallholders to participate in CF is scarce (Abebe *et al.*, 2013). In addition, evidence remains controversial as to who would benefit more and what mechanisms and institutional arrangements would suit an agricultural contract in developing economies. Only few studies, such as SAC (2011), Sum and Khiev (2015), and Thorng and Chao (2016), have examined models and practices of contract farming in Cambodia. Furthermore, none of these studies cross-examined multiple agricultural business models in contract farming across provinces.

In this study, we assess existing agricultural business models in contract farming among crop producers in three provinces in Cambodia, namely (PreahVihear, Kratie, and Mondulkiri) and diagnoses key success factors or shortfalls in the CF practices. We conducted a survey to assess some existing farming contracts to provide empirical evidence to inform policy-making that pertains to developing effective agriculture business models that benefit smallholder farmers and large farms.

II. Literature Review of Agriculture Business Models in Contract Farming

Smallholders enter into a formal or informal contract with a trader or processor in which they obtain inputs on condition that the product meets specified criteria and is sold to the contractor (Cramb *et al.*, 2017). Contract farming may assist small growers in gaining market access and reducing price risk (Sriboonchitta & Wiboonpoongse, 2008), or it assists food processing firms in allocating the distribution of risk between the firm and its growers (Glover & Kusterer, 1990). Small farmers generally use contract farming to overcome some challenges, such as when they face competition from producers who have adopted new technologies, producing crops under a contract could help farmers avoid direct competition. Where input supply and agricultural extension are weak and access to credit is difficult, public credit is generally subsidized. However, larger and more influential farmers tend to get more than their share. Private credit appears to be more effective in reaching smallholders (von Pischke *et al.*, 1983) but only partially so. Moreover, local markets for high value perishable goods tend to be very thin and thus highly volatile. Fruit and vegetables may be suitable for smallholders, but their prices are unpredictable and can drop suddenly and drastically if a few farmers market a day's harvest simultaneously. International markets are mostly not accessible to peasant farmers.

Input market uncertainty, being more important than output market uncertainty, drives smallholders' decision to participate. Farmers tend to minimize their risk by opting for the buyer firm above the state and NGOs as providers of seed, inputs, and technical assistance (Abebe, Bijman, Kemp, Omta, & Tsegaye, 2013). Abebe *et al.* concluded that institutional intervention in the input market could induce agribusiness firms to offer attractive contracts for smallholders. Contract farming has a significant positive effect on smallholder income overall, it discriminates against poorer smallholders (Cahyadi & Waibel, 2013).

Existing evidence appears to show that contract farming (CF) has had a positive impact on local economies by improving the welfare of rural households (Barrett *et al.*, 2012; Bellemare, 2012; Bijman, 2008). CF remains a much-debated institutional arrangement (Key and Runsten, 1999; Oya, 2012). For example, small farmers were able to accumulate production and management skills in the long run, thus improving their bargaining position. Together with improved infrastructure and a more competitive market due to farmers' innovation, the farmers' best choice may include non-contract production. (Sriboonchitta & Wiboonpoongse, 2008). Contract farming also prevails in fruit and vegetable production, particularly in Central America. Most frequently, this entails the export of high-value items such as asparagus, cucumbers, melons, or strawberries, with the firm providing quality control, brand names, and marketing channels. Business-oriented growers, cooperatives, and individual small farmers have all been involved. Total LDC employment in CF in these 'non-traditional crops' is much less than that in the traditional crops such as bananas and sugar.

However, there is some evidence that it is expanding at a faster rate and that these labor-intensive products are more promising outlets for small farmers (Glover & Kusterer, 1990).

Contract farming has the potential to overcome these problems. The risk reducing aspect of the contract may facilitate technology adoption. Farmers would choose to contract with a downstream processor and marketers to reduce risk (Heuth & Henessy, 2002; Lion, 2003) and to lower transaction costs (Allen & Leueck, 1995; Wang *et al.*, 2014). Contract farming represents a significant change in the organization of farm production in both the developed and developing economies and involves a vertical integration in which farmers establish a farming contract with food processors to deliver an agreed quantity of a specified crop for a guaranteed price. However, one outcome is that the contract system effectively separates land ownership by farmers and farm families from the power to make decisions about land use (Bruch, Rickson & Thiel, 1990). Despite its benefits, contract farming would provide some drawback as well. The primary benefit for farmers of contract farming is a reduction of economic risk, while contractors are guaranteed a steady source of supply allowing investment in largescale processing systems. The drawback is that farm families are increasingly marginalized by contract farming. Farmers lose power by dependence upon processing companies for "inputs" and know-how. The spread of contract farming has accelerated a narrowing of the genetic base of western agriculture, which has accompanied the development and widespread use of new crop varieties (Burch *et al.*, 1990).

Existing studies on contract farming in developing countries, including Cambodia, have highlighted important roles of contract farming on employment and livelihoods of farmers and rural economy. For example, two large rice producers in Cambodia employed 12,500 and 30,000 contract farmers, respectively, though these farmers may not work exclusively for these investors (Gironde, Golay, & Messerli, 2016). In Vietnam, a coffee processor contracts to 1,500 distributors, and another processor works with 2,800 farmers. Contracting also provide a stable market for outgrowers' produce, the 11 investors with outgrower schemes also helped to support the livelihoods of 30,000 contract farmers. However, Goronde *et al.* also highlight multiplier and indirect effects leading to either job creation or job destruction, such as considerable gender imbalance in terms of numbers and the types of jobs on offer. Only around one-third of employees were women, who were more likely to hold casual, temporary, or seasonal jobs being among the worst paid and most insecure jobs. Although outgrower schemes can be effective in supporting livelihoods when contract farmers can retain their land, marginalised groups, including women and minorities, were less likely to participate in outgrower schemes. Contract arrangements would affect success or failure of contract farming, and contract-farming models would need to address production and marketing limitations that prevent efficient functioning of industries and markets (Manorom *et al.*, 2011). In a sugarcane investment project in Isabela, The Philippines, contract farming is the company's preferred option, as it makes controlling the quality and productivity of the land possible and saves on the cost of organizing labor (Gironde *et al.*, 2016). In contrast, there is evidence that the contract farming interventions in the Philippines have transferred land from smallholders and contract farming has benefitted mid- and large-scale farmers more than it helps small-scale farmers.

The forms of contract farming (CF) vary in practices. CF generally exists in a private sector scheme, but a government-led outgrower scheme could involve a public enterprise purchasing crops from farmers, either on its own or as part of a joint venture with a private firm (Glover & Kusterer, 1990). Furthermore, nucleus-outgrower scheme, on the other hand,

is a variation of the outgrower scheme, in which project authority administers a plantation adjacent to the processing plants. Outgrowers are smallholders whether the original landowners or new settlers are tied to a nucleus estate from which they receive inputs and varying degrees of technical supervision and to which their produce is committed. Managed smallholders are those whose land is managed on a large scale by a state agency while they continue to occupy and operate their individual lots. Outgrower schemes could potentially empower smallholders economically, while addressing their production constraints (Matenga, 2017). Contract purchases supplement plantation production, but the proportion of its contract arrangement varies from case to case. Satellite farming refers to any of the variations of these CF schemes. Multipartite arrangements, while it is like outgrower or nucleus-outgrower schemes, emphasize the participation of several actors, including private firms, government agencies and foreign aid agencies.

III. Existing Legal Framework for Contract Farming

Currently, only the CF Sub-Decree (RGC, 2011) that lays the foundation for the formal contract arrangements in agriculture. There has been no legislation, however, on the enforcement of contracts in agriculture and on settlement of disputes in contract farming. The core objectives of the Sub-Decree are as follows:

- (i) strengthen responsibility and trust between producing and purchasing parties based upon the principles of equality and justice,
- (ii) ensure the accuracy of prices, purchases and supply of agricultural products quantitatively and qualitatively,
- (iii) increase purchasing, processing and exporting of agricultural products, and
- (iv) contribute to national economic development and poverty reduction.

According to the CF Sub-Decree, Ministry of Agriculture, Forestry and Fisheries (MAFF) is tasked with communication, coordination and providing technical guidance and services. MAFF monitors and evaluates all functions and report to the government, and collaborate with relevant ministries and institutions. In addition, a Coordination Committee for Agricultural Production Contract (CCAPC) would be established, which consist of MAFF, Ministry of Interior (MOI), Ministry of Commerce (MOC) and Ministry of Economy and Finance (MEF). The Department of Agro-Industry (DAI), which will serve as the secretariat of the committee, shall perform the following duties.

- (i) develop policy and strategic plans that support and promote contract farming,
- (ii) facilitate and strengthen accord between contracting parties, and
- (iii) intervene in or reconcile quarrels or conflicts relating to agricultural production contracts that expert institutions are unable to resolve, or help settle conflicts between institutions.

Since the adoption of the CF Sub-Decree in 2011, there has been no actual implementation of the legislation because there has been no legal framework for contract enforcement and contract dispute settlement. These constraints and limitations in administering and governing agriculture production contracts are evident when we assessed the three ELC schemes in Preah Vihear Province and in Mondulkiri Province. A strong coordination mechanism to

enforce government-approved agricultural contracts should cover agricultural land lease contracts and agricultural production contracts when prices of agricultural produce.

IV. Survey and Data Collection

4.1. Household farmers and ELC projects

We interviewed 134 households in the three provinces, of which 130 households own and cultivate the land. Only 3 households own and rent out their farmland and only 1 household leases in land to farm. Of 134 interviewed households, 60 have had a written contract, and the rest 74 households did not have a written contract. Out of 60 contracting households, 40 have had purchase contracts, while the other 20 have had sharecropping contract schemes. Based on the survey data, 4 households all of whom are rubber farmers appear to operating in an informal contract arrangement, i.e., without a written contract. No interviewed household was having a written contract in cassava sector. 23 contracting households were growing sugarcane and they have a formal, written contract. 16 households have had rubber written contracts, and 17 contracting households were growing rice. A majority of households have from medium or very good soil to cultivation. However, only 52 households or 38.81% of them have had a legal hard land title, while 38 households or slightly over 28% of them do not have any land document.

Table 1: land use characteristics per household

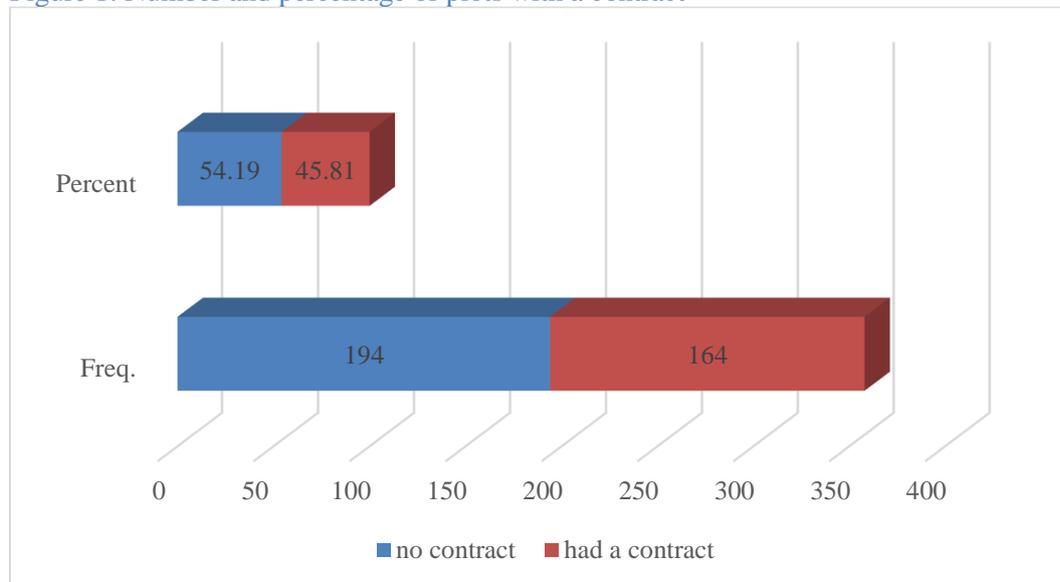
	Descriptions	Number of HHs	Percent (%)
1	CF and model of CF households		
	In no CF	74	55.22
	In a CF	60	44.78
	- Purchase Contract	40	29.85
	- Sharecropping Contract	20	14.93
2	HHs with a written contract		
	- Cassava	0	0
	- Sugarcane	23	41.07
	- Rubber	16	28.57
	- Other crops (<i>rice, cashew, & pepper</i>)	17	30.36
	- Total	56	100
3	Characteristics of land use		
	- Own and cultivate	130	97.01
	- Own and rent out	3	2.24
	- Lease in and farm	1	0.75
	- Total	134	100
4	Soil quality		
	- Good	57	42.54
	- Medium	74	55.22
	- Poor	3	2.24
5	Land document		
	- Land use directive/certificate	39	29.1
	- Hard title	52	38.81
	- Registered without a title	5	3.73
	- No land document at all	38	28.36
6	Primary land use		

-	Cassava	44	32.84
-	Sugarcane	19	14.18
-	Rubber	15	11.19
-	Other crops (<i>rice, cashew, & pepper</i>)	56	41.79

Source: Contract Farming Household Survey (CPS, 2018)

Figure 1 shows that out of 358 plots, 168 plots or 45.81 percent are operating under a written contract, while 194 plots or 54.19 percent do not have a written contract. Survey households have different motivation for joining a contract farming scheme. 34 households or 60.7 percent of 56 households with a written contract expected that there would be price guarantee and full commitment by a respective contract company to purchase their agricultural produce. 20 contracting households or 35.7 percent expected to earn extra income from the contracting. 10 contract households or 17.9 percent of them would expect to receive technical support provided by the contracting firm. 9 contract households or 16.07 percent said that receiving agricultural inputs was their main reason for contracting. 4 households or 7.14 percent reported that easier access to credit or loans from the contract firm was the reason they signed the contract.

Figure 1: Number and percentage of plots with a contract

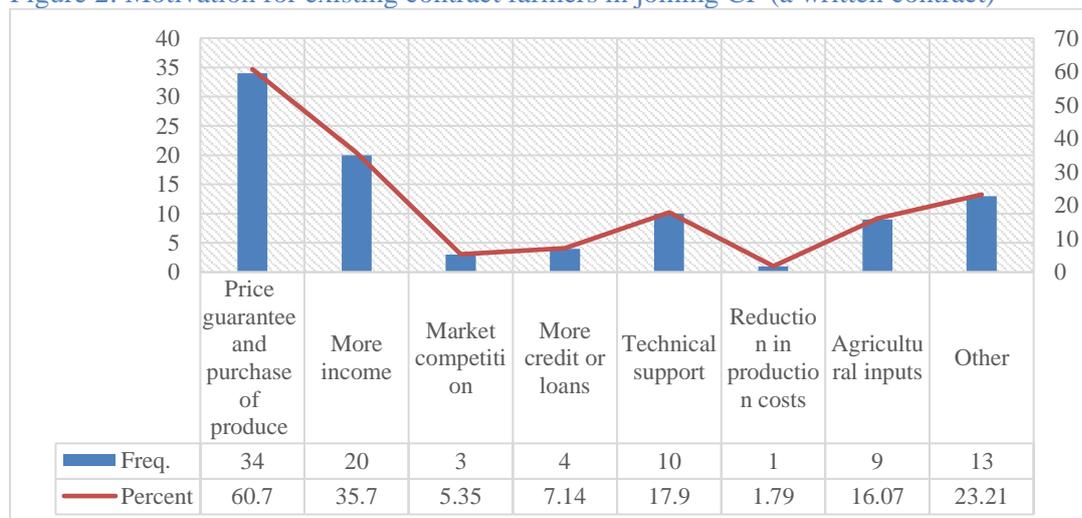


Source: Contract Farming Household Survey (CPS, 2018)

Household total land sizes vary. About 16 percent of 134 surveyed households own less than three hectares or 43.3 percent of them own less than 5 hectares. Almost 78 percent of them own less than 10 hectares. About 45 households own between 5 to 10 hectares. Only 17 households or 12.7 percent own between 10 to 15 hectares. 10 households or 7.5 percent own larger than 15 hectares up to 32 hectares. The survey data show that no household owns larger than 32 hectares per household.

The actual sizes and percentage of households that cultivated the land they hold do not appear to vary enormously from the reported land size they hold. 44 households or almost 33 percent cultivated between 1 to 3 hectares, or 75 households or about 56 percent cultivated less than 5 hectares. About 43 households or 32 percent cultivated between 5 to 10 hectares. However, only 10 households or 7.5 percent cultivated between 10 to 15 hectares, and only 5 households 3.7 percent cultivated large than 15 hectares per household.

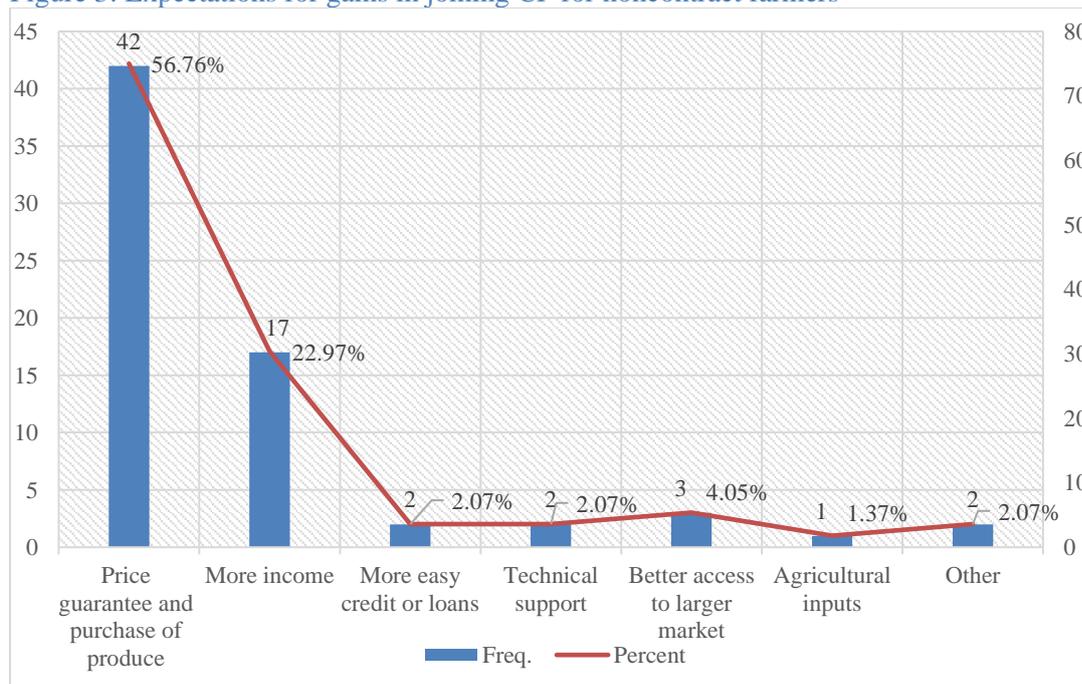
Figure 2: Motivation for existing contract farmers in joining CF (a written contract)



Source: Contract Farming Household Survey (CPS, 2018)

Figure 3 shows that among households that 42 of 74 non-contract households (or 56.76%), more than half, claimed that price guarantee and purchase of farmers’ harvests was the most important reason why they will be joining a contract farming. 17 non-contract households (or 22.97%) said higher income from contracting would encourage them to enter contract arrangement in the future. Only about 2 to 3 non-contract households said that obtaining easy credits or loans, agricultural inputs, technical support, better access to larger market are of their interest for joining a formal contract farming. 13 households reported that encouragement from government to engage in contract farming, joint investment in the community, establishing land rights security, and receiving free-of-charge land clearance services from the company are among ‘other’ reasons they entered into contract farming.

Figure 3: Expectations for gains in joining CF for noncontract farmers



Source: Contract Farming Household Survey (CPS, 2018)

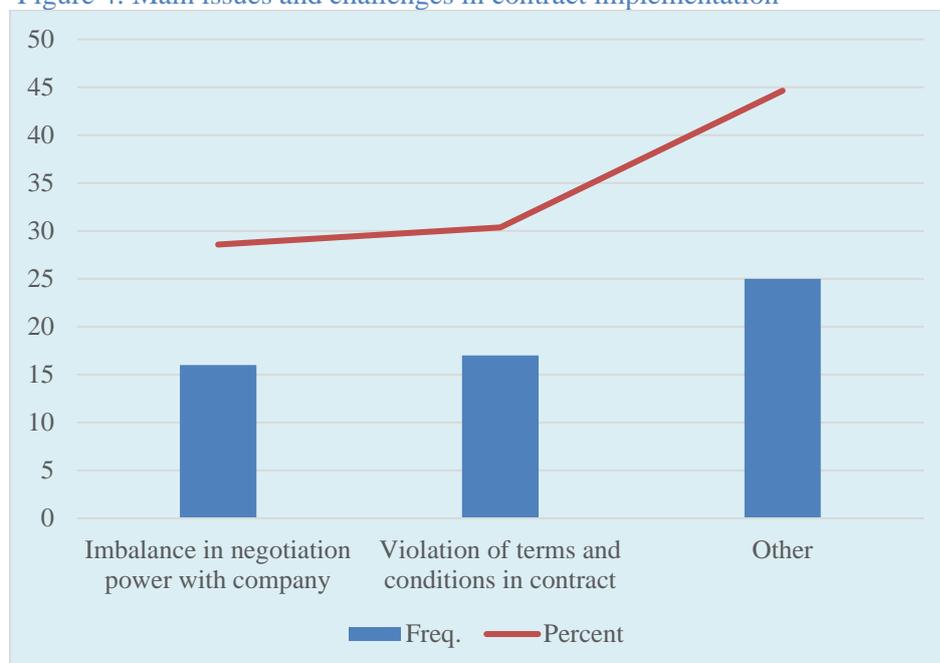
It appears that among households with a written contract, 29 households or almost 52 percent of them have faced very difficult challenges in implementing the contracts, out of which all the 23 sugarcane contract households (all in Preah Vihear) had faced the highest degree of difficulty in contract farming (Table 2). In addition, 7 households or 12.5 percent of 56 households with a written contract had somewhat difficulties or challenges, while 20 other households or almost 40 percent had no issue in contract implementation up to the day they were interviewed.

Table 2: Degree of challenges for contract farmers in contract implementation (by crop types)

	# of HHs by crop types	Percent (%) of HHs with a written contract
Very difficult	29 HHs - Sugarcane = 23 HHs - Rubber = 2 HHs - Other crops = 4 HHs (<i>rice, cashew, pepper</i>)	51.79
Somewhat difficult	7 HHs - Rubber = 2 - Other crops = 5 HHs (<i>rice, cashew, pepper</i>)	12.50
Not much difficult	20 HHs - Rubber = 12 HHs - Other crops = 8 HHs	35.71
Total	56	100

Source: Contract Farming Household Survey (CPS, 2018)

Figure 4: Main issues and challenges in contract implementation



Source: Contract Farming Household Survey (CPS, 2018)

Main issues in contract farming appear to have arrived from imbalance in negotiating power with company and breach of terms and conditions in contract. However, most households said that late or very late payments from 3 to 8 months, unacceptably low prices of sugarcane offered by the company, and failure of the company to notify the contract farmers when their sugarcanes are harvested and weighed as the causes for challenges in contract implementation.

Table 3: Households with a dispute in CP

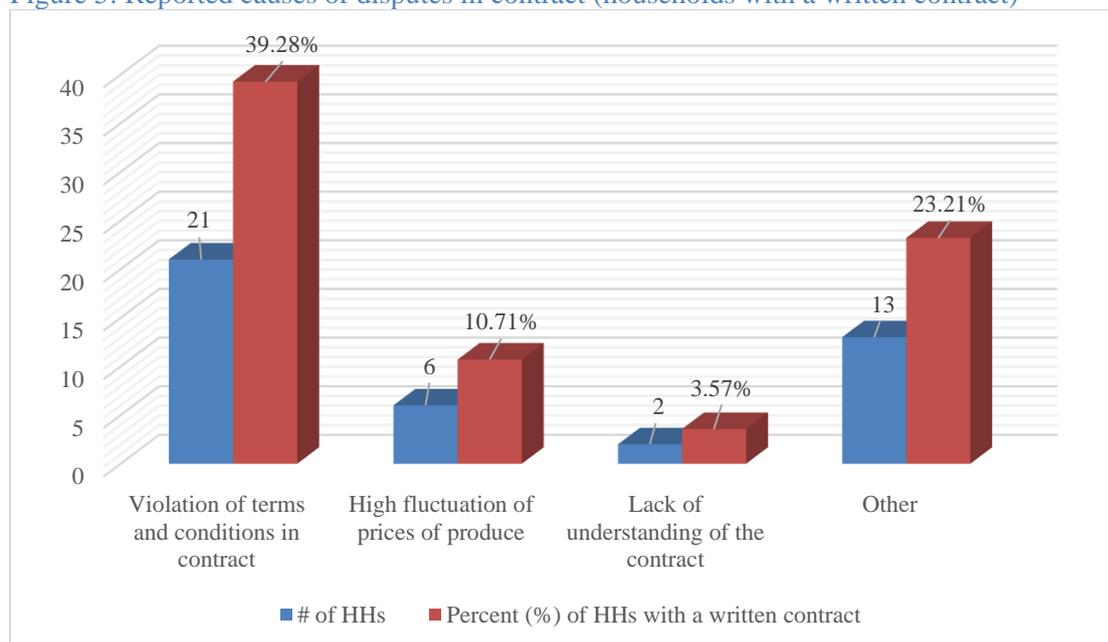
	# of HHs	Percent (%) of HHs with a written contract
Sugarcane	23	41.07
Rubber	3	5.36
Rice	1	1.78
Total	27	

Note: No HHs that grow cassava has had a written contract with contracting firms. Therefore, statistics for cassava crop is not reported in this table.

Source: Contract Farming Household Survey (CPS, 2018)

Out of 56 contract households, 27 of them have had at least a dispute in contract farming. Among them, 23 sugarcane contract households, 3 rubber contract households, and 1 rice contract household reported having contract disputes.

Figure 5: Reported causes of disputes in contract (households with a written contract)



Source: Contract Farming Household Survey (CPS, 2018)

The households reported in figure 5 have reported more than causes for the disputes in contract farming. Disputes in contract that resulted from violation of breach of terms and conditions in the contract have occurred in 21 households, or 39.3 percent. Fluctuation of prices of their agricultural produce appear to have happened in 6 contract households, or almost 11 percent of total contract farmers interviewed. 2 households or about 3.6 percent of them claimed that lack of understating of the contract, including the specificities of clauses, or the ignorance of it, as one of the main causes of contract disputes. 13 households or 23.2

percent of them said that ‘other’ issues, such as very low prices of their sugarcane offered by the company when harvested and very late account settlement for farmers have been the cause for disputes in contract.

Table 4: Trust of contract and noncontract farmers in stakeholders in contract farming

	Level of trust	# of HHs	Percent (%) of total HHs
1. Trust farmers have in farmer cooperative chief or chief of village	70-100%	73	54.48
	30-70%	44	32.84
	1-30%	13	9.70
	0%	4	2.99
2. Trust you farmers have in contracting company	70-100%	16	11.94
	30-70%	54	40.30
	1-30%	36	26.87
	0%	28	20.90
3. Trust in government to enforce contracts and intervene in disputes	70-100%	60	44.78
	30-70%	52	38.81
	1-30%	17	12.69
	0%	5	3.73
	Total	134	100

Source: Contract Farming Household Survey (CPS, 2018)

According to the survey data, farmers have different levels of trust in (i) government, (ii) farmer cooperative chief or villager, and (iii) contracting company. Table 9 shows that farmers have the least trust in contracting companies, i.e., only 16 households or 11.94% of 134 interviewed households said they had high trust in contracting company. About 28 households or 21% of them had had no trust in the contracting companies at all. This trust level is extremely low and is alarming for a contract farming to be effective. This low trust level could have resulted from their experience or they have heard about the bad experience of their peer villagers who have been conducting contract farming with an ELC agro-industrial company. While 73 households or almost 55% of them have had high trust in leader of farmer cooperative or village chief, less than 45% of them have had high trust in government’s ability to enforce contracts or intervene in dispute settlement.

Table 5: Trust of contract farmers in stakeholders in contract farming

	Level of trust	# of HHs	Percent (%) of total HHs
4. Trust farmers have in farmer cooperative chief or chief of village	70-100%	23	41.07
	30-70%	26	46.43
	1-30%	6	10.71
	0%	1	1.79
5. Trust you farmers have in contracting company	70-100%	11	19.64
	30-70%	16	28.57
	1-30%	18	32.14
	0%	11	19.64
6. Trust in government to enforce contracts and intervene in disputes	70-100%	24	42.86
	30-70%	24	42.86
	1-30%	7	12.50
	0%	1	1.79
	Total	56	100

Source: Contract Farming Household Survey (CPS, 2018)

4.2. Survey areas and crop types

The study focuses on three provinces, namely Preah Vihear, Kratie, and Mondulhiri. It examines three crops, i.e., sugarcane, cassava, and rubber, where there have been contract-farming schemes for only sugarcane and rubber crops. In addition, the survey team interviewed rice farmers, and we use the rice assessment as a complementary review to draw a lesson learned, in addition to the examination of the sugarcane, cassava and rubber.

V. Case Study 1: Rui Feng Sugarcane Plantation, Preah Vihear Province

Rui Feng (Cambodia) International Co., Ltd., a Chinese-owned agricultural company, has begun an operation of its sugar mill in Preah Vihear Province in early 2016. The company has received 8,841 hectares of land registered as Economic Land Concession (ELC) scheme from Cambodian government in 2011. The company is a joint venture, consisting of five sister companies, and collectively holds five separated ELC licenses covering 42,422 hectares. However, overlapping claims were rising and upon addressing overlapping issues with local farmers, the company has registered ELC land of 25,000 hectares, of which 20,000 hectares have been planted with sugarcanes. The sugar factory currently has 1.2 million tons of sugarcane supply, and it requires 2.5 million tons of sugarcane during refining period from December to April. The single line of the factory has the capacity to process 20,000 tons of raw sugarcanes per day that produces about 2,000 tons of refined sugar. The company exports raw and refined sugar to buyers in the EU, China and India.

Rui Feng has implemented contract farming with 70 local households since 2015. The company has signed individual 10-year contracts with the farmers and the company has kept original land titles issued by the government or official certificates of land holding issued by the provincial department of land administration. Before forging a contract with Rui Feng, a majority of the farmers in the area was cultivating rice, while some plots of their land were idle. Stating in contracts, the company responsible for land preparation, planting, training on planting and caring technique and seedling for first year, loan and fertilizer, and rice loans not more than one ton if farmers taking good care of the plantation. Schools and health centers were built in the area and give priority to contract farmers. The company responsible for collecting and transporting sugarcanes to the factory while farmers can go and check the tons of their plantations and get payments within 5 working days. Prices of sugarcanes based on sugar level ranking from \$26 to \$30 per ton. At the same time, farmers have to provide good caring, weeding, put fertilizer, kill pests following management plan provided by the company to ensure that sugarcanes are in good quality entering the factory. In case farmers do not have enough farm labor or capacity to take care of their plantation, the company would take care of the plantation but would charge farmers for the cost when make payment for the sugarcane yields.

5.1. Land use profile and land availability in Chep District

Preah Vihear has a total area of 14,031 square kilometers and has a population of only about 208,263. The province is remote and among the least populated areas. There are 7 districts and 47 communes in the province with abundant land for agriculture. Around 85% of economic activities in the province rely on farming. Farming cultivated areas is mainly for

paddy rice production covering around 56,084 hectares, agro-industrial crops (mug bean, peanut, soybean and cashew nut) about 28,513 hectares, rubber plantation on 4,969 hectares, and banana plantation of 3,141 hectares. One Chinese owned ELC firm, known as Rui Feng (Cambodia) International Co., Ltd. has begun its investment project in Cheb district on about 20,000 hectares with sugarcane plantation. According to provincial department of Agriculture, Forestry and Fisheries (PDAFF), Preah Vihear takes lead in contract farming model in Cambodia in which Chinese sugarcane contract farming with smallholder farmers is the leading one.

5.2. Overview of contract farming practice

The company has encouraged farmers to forge a written contract by providing drafting support, a loan and plantation training. It has agreed to pay farmers around US\$300 per ton of unprocessed sugarcane during the first year. However, it appears that implementation of farming contracts has not reached a satisfactory level as stated in the contracts as farmers have not provided good care or do weeding for their plantations. From interviewing with the company representative, it is stated that farmers did not take care or do weeding of their plantation but only wait to get the annual fees resulted low yield of sugarcane that make them get lower payment later years. However, farmers said they expect the company to take care of the plantation as they don't have appropriate farming tools to all those tasks and complained that payment per hectare of their land have been declining especially in 2017 to only \$80-\$100 per hectare. Since 2015, farmers have not received regular information of sugarcane collection schedules and have not been invited to observe the weighing of the sugarcane harvests produced from their contract farmland. In addition, they have not received late payments, contrary to the schedules in the signed contracts.

It seems farmers do not understand that the company charged caring cost in the annual yield collection when they did not take care of their farms. From field observation, it appears various challenges created by both the Chinese company and farmers that required mediation and facilitation to achieve desired results for both farmers and contractors.

5.3. Economic viability of the model

If farmers and the Chinese factory respect terms and conditions in the contract, farmers could obtain benefits from renting their land to the factory of around \$200 to \$300 per hectare of land. Furthermore, they could allocate their time to do own farming activities to generate extra incomes for households. By doing this, more farmers have shown their interest in joining a contract farming that the factory will have sufficient sugarcane for its required production while providing good source of income generation for farmers. Realistically, a good cooperation between farmers and investors could be beneficial for local economic development and livelihood improvement.

5.4. Challenges and opportunities

The interviews with the farmers and contracting firm reveal that there are challenges and. Fieldwork observations and discussions with the Chinese sugarcane company reveal that there are opportunities in current contract farming arrangements and important challenges and fundamental issues in implementing contracts between the company and local farmers. First, the multiple, uncoordinated, layers of communication channels between the company

management team to farmers could have worsen a misunderstanding of the terms and conditions laid out in the contract. Second, trust between the company and farmer groups has almost faltered, despite reconciliation attempts by the Preah Vihear Provincial Department of Agriculture. Third, lack of commitment to meet the terms and conditions of the contract has led to delays of payment to farmers. It has appeared to be a cause of tension, amid the misunderstanding of contract terms and conditions by farmer households.

Table that could be further examined to address and benefit. The key issue could be a lack of commitment by both sides to abide by the terms and conditions of the signed contract. In addition, they hold different understanding of the contract’s terms and conditions probably because of a loss in translation, or miscommunication of information dissemination from Chinese management team to farmers. The company has expected the farmers to contribute to caring activities, while farmers think that it was the company’s responsibilities and they were just wait get the annual fee agreed in the contract. Interviews with the farmers show that the company did not inform farmers about schedules of sugarcane collection, and so they were not able to observe the actual amount of harvest from their land.

Table 6: The case of Rui Feng Sugarcane Co., Ltd.

	Strengths/Opportunities	Challenges/Risks
For contracting parties	<ul style="list-style-type: none"> ▪ ELC licenses granted by RGC for agro-industry ▪ Available farmland for lease from farmers ▪ Potential for new contracts ▪ Cheap rental cost per hectare of ELC farmland ▪ Access to supply from local farmers to meet the needs, in addition to own production ▪ Access to supply of local labor to do processing and refinery works ▪ Opportunities for farmers to earn income from contract or make idle land more productive ▪ Better access for farmers to credit and farm inputs ▪ Access to production knowledge and cost-saving farming technology 	<ul style="list-style-type: none"> ▪ Multiple, uncoordinated layers of communication channels ▪ Lower trust and fear of fraud by Rui Feng sugarcane company and possibly by other potential companies ▪ Lack of commitment to terms and conditions of contract ▪ Tension and confrontation between farmers and Rui Feng sugarcane company ▪ Lack of government support in mediating contract disputes ▪ The state currently does not have institutional and legal frameworks to intervene in the disputes and contract enforcement ▪ Inability of farmers to cultivate their land rented to Rui Feng, i.e., that is in a dispute ▪ A loss of time and income from unsettled disputes

Source: Contract Farming Household Survey (CPS, 2018)

In addition, farmers reported they the company just paid the lump sum price per hectare of land of \$80 to \$100 in 2017. In the previous years (2014 to 2016), they got around \$200 to \$300 per hectare of land and they were able to see the yield weighed by the company. The

uninformed collection schedule and dramatic drop in fee collection per hectare appear to prompt the contract farmers to pull out from the schemes. In addition, the spread of the rumor that the company has not paid the farmers seems to have discouraged other farmers in the area who would potentially sign a contract with the company to wait and the result of existing contract implementation. The Provincial Department of Apiculture, Forestry and Fisheries (PDAFF) also stated that more intervention from local authority is needed to coordinate the contract farming implementation and mediate emerging disputes. The Phnom Penh Post, a local media, recently reported a case of confrontation between local farmers and the Rui Feng Company, and this tension could escalate if the disputes are protracted and no satisfactory solution is reached.¹

5.5. Suggestion for better practice of the model

The sugarcane contract farming is not seen as a success story due to misunderstanding of contracts' terms and conditions, communications and translation problems that have created inconsistency of information from Chinese management team to farmers. As farmers' expectation of higher and stable income and mutual trust was ruined when the contracting company failed to pay. Better benefits for farmers and sufficient sugarcane for the factory daily refinery requirements would be realized if both parties had adhered to the contract schemes while the company provide more clearness on schedule of sugarcane collection, transparent yield weighing and farmers contribute to take care of their sugarcane plantation for higher yields.

VI. Case Study 2: Socfin-KCD and Dak Lak Rubber Plantations, Mondulkiri Province

6.1. Land use profile and land availability

Mondulkiri is the largest province in Cambodia with total area of 14,288 square kilometers and home to 67,305 populations and comprises of 4 districts and 17 communes. Plenty of fertile soil for farming and plantations makes Mondulkiri conducive for agriculture and agro-industry are key industries. Total agricultural cultivated area is 45,493 ha in which rice covers 22,031 ha and the rest is industrial crops and fruit crops. Specifically, cassava and rubber are the key crops in the province covering 10,471 ha and 16,466 ha respectively. Of the total rubber plantation, 7,398ha is family rubber plantations and mostly located in Pich Chriada and Keo Seima Districts. Rice is potentially planted in Koh Nhek district and famous for its good taste. Other significant crops planted in this province includes bean, soybean, corn, sugarcane and other various cash and food crops. In Busra commune, there are 6,316 populations, out of which 4,345 (about 66%) are Bunong people. Noticeably, there are significant inflow migrants to Bousra during the last 10 years, according to commune statistic in 2016. Referring to the province investment information, there are six approved mining enterprises located in Pich Chriada District covering total area of 938 km² in addition to several other ELC projects. There are 5 ELC projects in Bousra Commune including Sethikula Co., Ltd, Varanasi Co., Ltd, Dak Lak Mondulkiri Aphivath, K Peace Investment Cambodia Co., Ltd and LKL Construction Co., Ltd covering total land of around 12,500 ha for rubber plantations.

¹ <https://m.phnompenhpost.com/national/preah-vihear-villagers-summoned-court-detaining-bulldozer>

6.2. Overview of sharecropping model practices of Socfin and Dak Lak companies

Two ELC companies in Mondulkiri Province have implemented a similar approach of sharecropping with smallholder farmers for rubber plantation upon resolving land overlapping claims and the GRC's leopard skin policy under Director 01.

First, Socfin –KCD (Cambodia) is a European-owned company and a joint venture between Socfinasia and a local partner Khov-Chuly Development (KCD). From 2014, Socfin-KCD own 100% of the joint venture and another two ELC projects in Mondulkiri: Sethikula with 4,273 hectares and Varanasi on 2,705 hectares. Practically, Socfin-KCD manage three ELC projects inclusive of Coviphama Co., Ltd on an area of 5,345 hectares obtained in 2013 in Commune of Bousra, Pech Chenda district. Total investment of the three ELCs was reported of about €70 million as of 2015 in which about 20% of the capital invested in building local infrastructure. Total land concession area of the company is 12,323 ha of which 7,300 ha covered with rubber plantation and 3000ha remain reserved forest. Resolving land claim by local farmers, Socfin offer four different options in which contract farm was the most popular option that farmer rent the land for 60 years. The company provided loan for rubber plantation development for 15 years with 7 years grace period with interest rate of 5% and 8% for the remaining years. Many farmers do not have clear information of the amount of loans owed to the company as they do not receive regular updates from Socfin. However, loan information can only be provided if farmers request it. Some contract farms located on good location but some scattered on unfertile soil and far from their home, as reported by farmers.

The company provides credit support during the first year of plantation for maintenance cost, yet farmers have to seek credit elsewhere from the second year, rendering a burden for farmers to bear. The credit provision by the company has appeared to be unfavorable to farmers and it has caused a high dropout rate of farmers from contract farm scheme. Currently, there are about 40 farm households maintaining the contract farms, each family holding rubber plantation from one to two hectares. The company provides technical training and seedlings to farmers currently living in or adjacent to the rubber plantation. The company has pledged to buy the fresh latex at a fair market price from the contract farmers. It is reported that there are more farmers want to join rubber contract farming with Socfin but the company is considering whether to expand the shared-cropping scheme with smallholder farmers.

A number of farmers have become workers with Socfin, including 250 latex collection workers, 52 latex processing workers, and 2 engineers. Most workers earn around US\$4 per day and they receive additional benefits, such as gasoline, healthcare, monthly allowance of 25 kilograms of milled rice, overtime payment and payment for schooling for children. On average, workers earn around US\$250 per month but most of them are migrant workers from other provinces. From field observations, it seems there are challenges for farmers to maintain the rubber contract farmers due to location, caring and financial constraints during the growth period up until maturity stage to be able to harvest. The Managing Director of Socfin expressed that working with smallholder farmers has been challenging, and therefore, Socfin has preferred to manage their own farms and engage local farmers as workers in office or farm work. The schemes seems to provide economic benefits and potential for

livelihood improvement to farmers in long term if they are able to maintain the contract farms while the company maintain favorable contract farm implementation with good cooperation with farmers. However, only a small proportion of farmers maintain the contract farms and it is not certain if they are able to maintain the rubber plantations in the future to feel significant income from latex collection.

Second, Dak Lak Mondulkiri Aphivath (Dak Lak) is a Vietnamese state-owned company with headquarters based in Vietnam's Dak Lak Province that borders with Cambodia's Monduliri Province. The company specialises in planting, tending, exploiting, processing and exporting natural rubber. Dak Lak received an ELC to operate on a total of 4,162 hectares in 2008 for 70 years but later on, the approved license was scaled back to 50 years because of revision ELC management from Cambodian government. However, from our interview with the company representative, Dak Lak currently holds only about 1,500 hectares of ELC land, of which 1,420 hectares are cultivated with rubber plantation and another 80 hectares are allocated for preservation forestland. The company has no plan to expand their rubber plantation due to declining price of latex. Upon, addressing land claim by local farmers and implementation of leopard skin policy through Directive 01, Dak Lak has engaged with 58 farmers in shared-cropping plantation as one of the options of conflict resolution of overlapping land with local households. Later on 17 families dropped out and some shifted to plan other crops rather than rubber. From discussion with the company representative in August 2018, the company has no plan to expand shared-cropping contracts with local farmers due to declining price of latex price but probably in 2020 the company will reconsider implementing more contract farms and request for ELC land if latex market becoming better. Dak Lak is planning to build latex processing factory from October 2018 and will buy all latex from farmers regardless of contracts with the company.

Farmers found contract farming with Dak Lak more promising comparing to Socfin as Dak Lak offers land tenure and recognizes farmers' ownership over the plantations to farmers. In contrast, farmers' land tenure with Socfin is only for 60 years. Dak Lak offers credit to support maintenance cost for the pre-harvest period with 20-year credit term inclusive of 9-year grace period. The company charge 5% of interest rate during the first 7 years then 8% for the remaining period. The company is more transparent in billing to farmers with regular update of loan owe to the company. The proportion of contract farming with Dak Lak remains relatively high due favorable credit scheme and more responsive to request of technical support. According to Dak Lak representative, farmers have 10 years to repay the loan to the company in which interest will count from 2020. Farmers owe Dak Lak about \$4,500 per hectare of rubber plantation inclusive of caring fee, fertilizer and chemical usage. However, the amount is reduced when farmers take own responsibility for caring their rubber plantations. Despite this, some farmers take borrow more cash to hire workers for weeding in cases they lack of family labor to do the job. In general, contract farmers with Dak Lak Company will potentially gain good income from their rubber plantation and be able to maintain contract farms in high rate.

6.3. Economic viability of the model

It is not certain by the time of this survey if farmers will be able to retain their rubber contract farms with Socfin and Dak Lak. However, the potential for income generation from latex collection is approaching for some farmers while other already started collecting latex. Farmers could earn around \$1500 to \$2000 per hectare of rubber plantation that is beneficial

for livelihood improvement and children schooling while receiving technical support and credit from the ELC companies. If they have such contract farms from five hectares then the contract farmer could generate high profits for household economic improvement. Besides, this model allow farmers to have ownership and good investment on their farms for desired yields though Socfin only give 60 years ownership of the farms while Dak Lak provide tenure of the contract farms. This could provide some long-term economic benefits and opportunities for income generation for local farmers.

6.4. Challenges and opportunities

Table 7: The case of Socfin and Dak Lak ELC companies

For contracting parties	Strengths/Opportunities	Challenges/Risks
	<ul style="list-style-type: none"> ▪ Large ELC area for Socfin's and Dak Lak's rubber plantations and its factory construction ▪ Willingness of both ELC companies to resolve land disputes with local farmers ▪ Sokfin's and Dak Lak's willingness to purchase rubber yields from farmers at market prices ▪ Provision of farm inputs and know-how to farmers ▪ Provision of loans by Sokfin and Dak Lak to local farmers ▪ Potential gains, such as a large supply of rubber produce (raw and semi-final) from contract purchases for both companies and farmers ▪ More income for farmers from their sale of rubber produce to companies ▪ Provision of health services, road infrastructure, and schools 	<ul style="list-style-type: none"> ▪ Declining indigenous smallholder households (from 70 to about 40), leading to community loss of joint bargaining power with companies ▪ Imbalance in bargaining power between farmers and Socfin ▪ Difficulty in forging a written contract since the indigenous farmers' very low literacy and limited knowledge of detail of contract ▪ Unlikely contract farming with local, indigenous households since Sokfin and Dak Lak do not intend to have a written contract with local farmers ▪ No attempt to allow CF to take shape since Sokfin's continued attempts to buy out farmland of local farmers and move them outside of plantations ▪ Farmers' short land tenure with Socfin vs.

Source: Contract Farming Household Survey (CPS, 2018)

Some challenges remain for this sharecropping model due to location of the farms, outstanding loans to Socfin and Dak Lak and farmers' commitment retain the contract farms until they yield benefits and to take care of their rubber plantation for higher yields. Some farmers might have capital constraints to maintain and care for the plantation that they might end up sell the farms to the companies for short-term cash need. According to Socfin's Managing Director, working with stallholder farmers is challenging due their low commitment to taking care of the farm for higher yield.

6.5. Suggestion for better practice of the model

The contracting parties would be committed to comply with the contract and consult among themselves to settle the dispute and build a strong foundation for trust.

VII. Case study 3: The case of Green Leader Cassava plantation in Kratie

7.1. Land use profile and land availability in Snoul District

Kratie is located in the northeast region of Cambodia is one of the provinces densely covered with ELC projects. There are 5 districts and 41 communes with total population of 339,756 and total area of 11,094 square kilometers. Red fertile soil in the province makes it potential for agro-industrial crops such as rubber, pepper, cassava cashews, corn and rice. Total cultivate agricultural land is 83,569 ha in which rice paddy cover 45,438 ha, agro-industrial crops 41,550 ha and fruit and permanent crops is 11,184 hectares. The majority of the agro-industrial cropland cover approximately 39,125 hectares of is rubber plantations, of which 6,420 hectares is family-owned. Cassava is one of the key and popular crops in Kratie with plantation area of 32,003 ha produced annual yields of 800,075 tons yet income of farmers remain low due to weak competitiveness in international markets and mostly exported in raw and unprocessed form. There are 25 ELC projects in Snoul districts covering around 107,000 hectares, most of which has been allocated for rubber plantation.

7.2. Overview of the model practice

Green Leader, a Chinese company, is a contrasting Cassava processing factory located in Snoul district of Kratie Province. It has planned to begin its operations in January 2019, by which, the factory required about 2,000 tons of fresh cassava per day. However, the company does not have any contract with local farmers. According to the company representative, Green Leader was conducting a brief research on cassava yields in Mondulhiri, Kratie, Kampong Cham and Thbong Khmum to supply its factory operation. He said the company would welcome any initiatives in arranging farmer cooperatives to sell cassava to his factory and willing to support those farmers in cassava plantation to achieve the company sustainable growth and cooperation with different stakeholders. However, providing higher prices to compete with other cassava purchasers might not be feasible for Green Leader even if the factory will need sufficient cassava for daily production from January 2019. The interviewed cassava farmers reported that the company would buy any cassava yields from farmers in different provinces within 250 kilometers from the factory site. In August 2018, Green Leader employed around 100 workers, including factory workers and a team to search availability of cassava in four provinces. The company may build another 10 factories in other provinces in Cambodia after an assessment of success with the operation of its first factory.

7.3. Economic viability of the model

The examined agriculture business models operated by written contracts in the three case studies are in general not sustainable nor promising. It is not an economically viable. Several

drivers of inefficiency and deficiency could have spelled out the lack of success in contract enforcement and implementation. Risks and tensions in contract implement have heightened for PVH Rui Feng Sugarcane Company when sugarcane production has stalled and delayed payments to farmers have been delayed. These issues are yet to be settled, when the contract smallholder farmers are likely to pull out from the contract scheme and reclaim their land to do own cultivation. All these issues have created distrust in agricultural contract farming practices, which would provide negative impacts on future uptakes of contracts. In addition, although Dak Lak rubber plantation appears to provide an alternative mechanism for dispute resolution regarding land rights of local villagers and smallholder farmers currently engaging in contracts, there has been no strategy from the government to oversee this process once a conflict occurs.

7.4. Challenges and opportunities

Our observation through a consultation with representatives of Green Leader in their Head Office in Phnom Penh shows that the company has not launched its factory and there has been no contract with local farmers. The company does not attempt to establish any written contract with farmers. Similarly, the interviews with farmers indicate that they could not choose to enter into a contract because there has been no discussion yet on possibility for contract farming in their community with the Green Leader.

7.5. Suggestion for better practice of the model

It would be possible to conduct some consultations between farmers and the companies to review some appropriate agricultural contract schemes that may work for them. However, it is still early at this stage because the farmers and the company still await the initial launch of the factory and actual operations of their business until the company would decide on their next strategic move.

VIII. Findings and discussion

Current practices of contract farming of the selected crops in the three studied provinces have provided good prospects and exhibited challenges. Main drivers of breach of contract and key challenges in contract implement include the followings. First, it is unclear clauses in calculation of streams of payments to farmers that have leased out their farmland to Rui Feng sugarcane factory. Second, lack of attention to the specifics and detail of the terms and conditions of the contract and lack of knowledge of contract implementation have prompted the reported breach and abuse of contract by the contractor. Fourth, the limited capacity of the provincial and local governments to enforce the contracts and to settle differences have further worsened the trust between existing contractor and local farmers and would discourage future potential contract opportunities for the existing contract farmers and potential farmers. Fifth, lack of a state institution to govern contract farming schemes and agricultural contract disputes appears to have stifled government's efforts to promote contract farming in Cambodia. All in all, the contracts in farming does not need to be highly technical so long as they are carefully drafted and are made understood to local farmers, particularly the terms of payment and duties to perform.

IX. Conclusion

This study used household survey data and data from a rapid assessment method through interviews with four ELC companies in four provinces of Cambodia and consultations with provincial or district officials. The agricultural business models examined in this study present many challenges as well as opportunities in the current practices of contract farming conducted between large ELC farms and smallholder farmers. The prevailing Sub-Decree on Contract Farming, if without further advancement of strategies and mechanisms to enforce the contracts in agriculture and agro-industry, would probably not impact contract farming practices in Cambodia. It is important, and maybe necessary, for the government to address the following three key underlying constraints to build trust and promote contract farming.

- (i) Institutional and legal framework constraints for local and sub-national governments enforcing the contracts and contract dispute settlement,
- (ii) Policy coordination and technical support to have an oversight for contract forging and contract implementation, and
- (iii) Knowledge and capacity of local farmers in drafting, encoding, and implementing the contracts.

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