

A CASE STUDY OF INCLUSIVE BUSINESS MODEL USING BUSINESS MODEL CANVAS FOR CONTRACT FARMING

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ABSTRACT

Key objective of this paper is to identify the contract farming business model, which enhances the integration of smallholder farmers into Thailand's banana value chain, by analysis of business model canvas. This analysis was based on a survey of small-scale banana growers, as well as in-depth interviews with key informants. The paper revealed that the business model, where private company contracts farmer group, was the most effective, in terms of average net income received by small-scale farmers. A farmer group plays a key role in linking an agribusiness company to small-scale farmers. With the company's key resource of having production expertise and marketing networks, it provides technical knowledge, assistance, and advice to strengthen farmer group's capability. Farmer group's commitment on high-quality banana production and willingness to learn enables the farmer group to successfully manage its purchasing from members and post-harvesting activities.

Keywords: Business Model Canvas, Contract Farming, Inclusive Business Model

INTRODUCTION

Banana is important for small-scale farmers as it is usually produced by smallholders, having not more than two family labors to take care of the farm. In addition, it provides a nutritious food and a significant source of revenue all year round.

The structure of the banana value chain in Thailand is dualistic: traditional and modern chain (Poapongsakorn et al., 2019). The traditional chain involves spot market transaction and small-scale farmers. Many small merchants acted as middlemen in the wholesale markets. Small-scale farmers sold bananas in the traditional chain face low price risks during the period of high supply or low demand in the market. The modern chain involves modern retailers sold safe bananas to high-end markets. A rapid expansion of Thai food modern retailing has changed the supply chain structure and business relationship of banana value chain. Due to the increasing demand for safe fresh bananas, modern retailers need to control the supply chain. They sign contracts with suppliers to secure supplies for the whole country. The suppliers then buy bananas from farmers, under contract farming (CF) for farm quality controls such as herbicides use and ripening process.

The rapid rise of modern trade is one of the key drivers of agricultural transformation. However, the relatively strict requirement in food safety and quality controls is a challenge to the participation of smallholders (Reardon&Timmer, 2007; Poapongsakorn & Bunyasiri, 2017).

Most of the Thai farmers are small-scale and have limited capability in meeting high and stringent food safety standards. Smallholders' productivity may be limited by constraints such as insufficient water for irrigation, having limited productive assets, particularly family labor and production technique and management to produce safe and high-quality products.

The CF business model is one of the types of an inclusive business model that overcomes constraints of linking smallholders to agricultural value chain (FAO, 2015). CF can assist smallholders to access inputs, credits, technical and managerial capability or to guarantee the market (Barret et al, 2002; Bijman, 2008). However, in practice, CF may exclude smallholders to participate in, which is an element for inclusive development. Minot & Sawyer (2016) reviewed the practice of CF in developing countries and found that there is less clear on the degree to which buyers are willing to contract smallholders. Ragasa et al. (2018) found that various maize CF schemes in Ghana seem to be limited for broad-based inclusion of the poor both in terms of scheme participation and income improvements. de Boer et al (2019) found that inclusiveness of the smallholder farmer in the global cocoa value chain can be achieved with a business-supported model. However, a business model of CF practices that links smallholders to agricultural value chain has not been analyzed yet. Hence, a successful case study of banana CF practice in Thailand is analyzed using a BMC to gain insights on how an agribusiness firm links small-scale farmers and key factors which strengthen the linkages.

RESEARCH METHODS

A rapid CF scheme assessment was used as a tool for the analysis to identify key features of CF scheme. The data was from in-depth interviews with key informants regarding banana value chain sold to modern trade. Key informants comprise of farmers, leaders of farmer groups, cooperative managers, company executives, extension staffs, procurement staffs at the modern trade and government officials. A survey of 150 small-scale banana growers was also conducted to assess the performance of farmers under different types of CF arrangements. Performance indicators include average banana yield, average price paid by buyer, average net income from banana cultivation per Ha. The study carried out in Patumthani and Petchaburi provinces in the central Region and Nakorn Ratchasima province in the Northeastern Region. The first two provinces represent the top two banana production provinces in Thailand. The latter province is the new potential area for growing bananas.

The selected case for analysis of BMC corresponded to the case where the CF business model is the most effective in generating smallholder's profitability, measured by net income.

The Business Model Canvas (BMC) applied to the CF, modified from Will (2015) was used to illustrate the linkage of the selected case. The BMC consists of nine building blocks: (1) market requirements, (2) value proposition, (3) CF Infrastructure/Logistics, (4) CF Supplier-buyer relationship, (5) Revenue Stream of CF, (6) key activities, (7) key resources, (8) key partners and (9) cost structure (Figure 1).

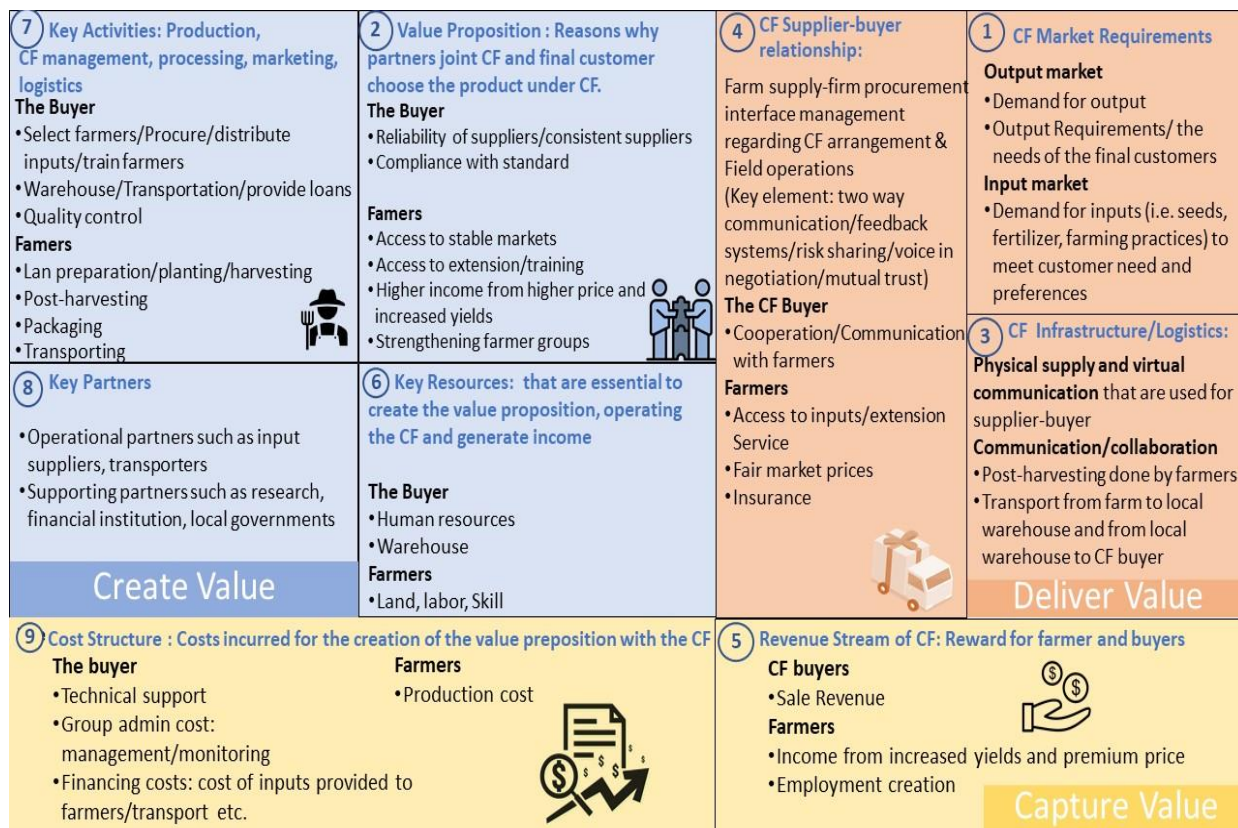


FIGURE 1
CONTRACT FARMING BUSINESS MODEL CANVAS MODIFIED FROM WILL(2015)

FINDINGS AND DISCUSSION

Banana CF Model and Arrangements in the Study Area

Three types of CF business models corresponding to three types of CF arrangements were found in the study area:

1. The Informal Model: CF Arrangement Between a Wholesaler and Small-scale Farmers

An individual wholesaler in the local area has an informal marketing agreement to buy bananas from small-scale farmers under his/her network at the predetermined quantity, price, and standard. The wholesaler is responsible for grading, packing, and transporting the bananas to the supplier of modern retail stores. A wholesaler usually provides loans and harvesting services to farmers but does not provide extension services. Banana shoots or fertilizer are sometimes provided to farmers if needed.

2. The Intermediary Model through Cooperative: CF Arrangement Between a Cooperative and Small-Scale Farmers

A modern retailer buys bananas from agricultural cooperatives. The cooperative then has production and marketing agreements with members to grow bananas according to the specification of the modern retailer. Members need to notify the cooperative about the detailed production and follow the cooperative’s production plan. Farmers allow the cooperative to inspect their plots. For the input requirement, the cooperative does not require farmers to buy the

cooperative’s banana shoots. Cooperatives provide loans, extension, and harvesting services to farmers.

3. The Combination of Nucleus Estate Model and Intermediary Model through Farmer Group: CF Arrangement Between a Private Company and a Farmer Group

The private company has its large banana-growing plantation. The company subcontracts a leader of a farmer group who manages and collects bananas from its members according to the company’s specification. The company provides full support in terms of banana shoots and extension and advisory services to the farmer group. The company enhances the farmer group's post-harvesting activities by supporting cleaning and packing facilities. The company also subcontracts the farmer group to clean, pack and transport bananas to modern retail outlets in the province.

Selected Case for BMC Analysis

Three types of CF business models stated above were evaluated through participation of small-scale farmers and farmer’s profitability (Table 1). The average land size does not significantly differ across types of buyers. Contracted marginal farmers who have less than 1 Ha, were found under all types of business model. The private company does not exclude marginal farmers. Marginal farmers can join CF through farmer group that has an agreement with the company. Considering the farmers’ performance indicators and F Statistics, average banana yield, banana price and net income from banana significantly differ among different business models. It is noted that the average banana price, banana yield and net income from banana received by farmers were highest in the case of CF business model where private company contracts farmer group. Therefore, this type of CF business model was selected for BMC analysis due to the most effective case in generating smallholder’s profitability.

Indicators	Buyers of CF Business Models			F-Statistics
	Wholesaler	Cooperative	Private company	
Average Banana Land size (Ha)	6.66	5.97	8.77	1.34
% of Farmers Having Less Than 1 Ha	56	67	47	
Average Banana Price (USD/kg)	0.79	0.81	1.01	7.39*
Average Banana Yield (Kg/Ha)	563	715	842	4.72*
Average Net Income From Banana (USD/Ha)	102	164	273	12.07**

Source: From the Author’s Survey (2019)

Note: The null hypothesis is that the average value of each indicator does not differ among three types of buyers. *significant at $p \leq 0:05$; ** significant at $p \leq 0.10$.

BMC Analysis of the Selected case

Background

The “King Fruits” company is a grower of bananas and a supplier of fresh bananas to serve modern retailers. The company has its own banana plantation of 480 Ha and has CF’s plantation of 160 Ha throughout the country. The company expanded the market network to modern trade in the Northeastern region. However, the logistic is too costly as the modern trade outlet is far from the company’s collecting outlets. As a result, the company outsources local supply from the “Sukpaibul” farmer group to clean, pack and transport to modern-trade outlet, which is much less costly.

The “Sukpaibul” farmer group, located in Nakornratchasima province (Northeastern region) was organized with 6 members and had a contracted agreement with the “King Fruits”

Company in 2016. The number of members of farmer group increased to 28 members in 2019, covering about 56 Ha of total banana farmland.

Results of the Nine Blocks of the BMC Concept

1. Market Requirements

There is a high demand for bananas with food safety standard in modern retailers. Supplying bananas to the modern trade requires high-quality banana shoots and knowledge of production and management in terms of product delivery, packaging, and quality, to meet the standard of modern trade.

2. Value Proposition

The company ensures a reliable supply of fresh bananas with Good Agricultural Practice Standard to modern trade in the Northeastern region. The farmer group gains access to modern trade with a guaranteed relatively high price. The farmer group also gains access to technical advice and extension service. The farmer group is strengthening due to the involvement of post-harvesting activities such as cleaning and packing to the modern trade.

3 CF Infrastructure/Logistics

The company provides bananas shoots, at the cost price to the farmer group for distributing to members. The company also provides the post-harvesting facilities such as cleaning equipment, packing facilities to the farmer group. The farmer group provides an area for collecting bananas as well as managing post-harvesting activities (such as grading, cleaning, packing, etc.), located near the member's farm plots. Each farmer member is responsible for transporting bananas from farm to the farmer group's collecting outlet. The farmer group is responsible for transporting bananas from the farmer group's collecting outlet to the modern trade.

4. CF Supplier-Buyer Relationship

The marketing team of the company has built a network of modern retailers to maintain a stable market. The company uses the personal assistance to enhance mutual trust. The CEO of the company, who has expertise in banana production communicates and works through farmer group and members very closely via group meeting and line chat/ VDO-call. The company also provides on-field training to farmers under the farmer group, for having the same understanding of banana standards and establishing capacity building to improve farmers' skills in good farming practices and post-harvesting activities. In addition, the company has demonstration plots for the farmer group to learn by doing and adapt to their field.

The company offers a fair price and price incentive for farmers. The company guarantees a fixed price for the whole year by quality grading of banana, which is higher than the average price for the whole year. The company provides a price incentive for high-quality grade, averaged at 1.5 USD per a comb of bananas compared to 0.8-1.2 USD for the second grade. The low-grade banana is sold for 0.3-0.4 USD per kilogram. In cases of high market prices during a short period of time such as Chinese New Year, the company pays an extra of 16 USD per tons to farmers.

5. Revenue Streams

For the company, the total sale of fresh banana throughout the country increased from 0.05 Million USD in 2017 to 0.15 million USD in 2018. Apart from fresh banana sales, the company generates revenues from banana processing such as banana powder and banana ships. From the survey in 2019, banana growers under the CF with the company received yields of 842 Kilograms per Ha, higher than the average provincial yield at 500-600 Kg per Ha. Contracted

banana growers also received a premium buying price of 0.2-0.3 USD/Kg. These growers earned 80-180 USD per Ha higher income than the average growers.

6. Key resources

Resources of the company are its own banana plantation, labor for plantation and processing, packing houses that are certified by the Good Manufacturing Practice Standard, technical expertise in banana production and processing. Key resources of banana growers include land, irrigation equipment, and family labor to have intensive care for growing banana.

7. Key activities

The marketing team coordinates with the production team to receive the orders in advance. The production management team then coordinates with the leader of farmer group and members under CF to plan production and harvesting to ensure that the order quantities were delivered to modern trade. Farmers must abide by the terms of the contract that includes planting method, specification of bananas, and schedule of delivery. Farmers, who are members of the farmer group must follow production practices under the company's supervision. They harvest and transport banana to the farmer group's collecting outlet. After that, the management committee of the farmer group sorts, washes, dries and packs banana and transports bananas to the modern trade's collecting outlet.

The Research and Development division of the company has developed high-quality banana shoots, innovated new products made from low-grade banana such as banana powder.

8. Key Partners

The key partner is the Research and Development institute for innovative of low-grade products. Local government is also a partner that provides technical assistant for GAP inspection and certification.

9. Cost Structure

The major cost of the company is the buying cost of banana from the farmer group at the guaranteed price of 1.5 USD per a comb of bananas. Other costs include the investment cost for post-harvesting facilities for the farmer group such as washing, drying, and packing facilities. Other costs include the salary of the extension staff to monitor banana plantation of members under the group.

The major cost of the farmer group is the management cost, including labor costs for hiring labor for grading, washing, drying, packing, and transporting bananas to the collecting outlets.

For small-scale farmers, variable costs include expenditures on farm inputs (shoots, fertilizer, and herbicides), water for irrigation, electricity, and transportation. Fixed costs include land rent and investment in irrigation facilities such as sprinkles. The average variable cost of contracted farmers was 109 USD per Ha, 20 USD lower than the average farmer in the area.

Key Factors Strengthening the Linkages

1. Commitments of company, small-scale farmers, and leader and management team of the farmer group

The company has made a commitment to enhance farmer's production capability in high-quality banana cultivation and to support the farmer group. The company's priority is given on the provision of appropriate technical advice to farmers and support of group-certification of GAP. The company believed that the CF will be sustained if farmers can gain high net income from CF throughout the year. If farmers can produce a higher proportion of high grades of banana, they can reap benefits from a higher price. Good farming practice can reduce the cost of

production and recording income and expenses will reduce unnecessary expenses. This can help farmers have the net income to cover expenses and have savings to improve their livelihood.

Commitments of small-scale farmers in producing high-quality banana are also a key factor for strengthening the linkage. With high commitments, small-scale farmers under the farmer group have followed the production company's guideline, making them receive the group certification of GAP.

In addition, a leader of the farmer group or the management team of the group have the commitment to take on new challenges in collecting high-quality banana to the modern trade's collecting outlet.

2. Strength of farmer group

The farmer group was formed based on the middle-aged farmers' interest in growing high-quality banana. Leadership and effective management team enhance the capacity to plan, manage, collect banana from the group's members and manage post-harvest activities to timely deliver the product at the agreed quantity and quality. In addition, the participation of members would enable members to have a better understanding of farming practices and techniques of growing high-quality bananas.

With the strength of the farmer group, the company can control the production practices of individual members to achieve quality requirements and reduce transaction and logistic costs of the company. In addition, the effective management team of the group would provide each member with inputs and technical advice to enhance the output of members.

3. Honesty, transparency, trust, and good communication in production and purchasing system

Company and farmers' honesty, good communication via face to face meetings and field visits would enable all parties to have a better understanding of the contract condition, production, and market situation. In addition, transparency in production and buying system, standard, and price-setting are very important in strengthening the linkages.

4. Company's technical expertise and the availability of extension staffs and the effective utilization of ICT

The company has a professional team, including the CEO who have technical expertise, to continuously train and advise growers and management team of the farmer group to improve production and management skills. This helps small-scale farmers to adopt techniques for good farming practices to improve yield, high-grade quality, and reduce the cost of production. The company communicates with farmers by using ICT via line so that the company can respond promptly to solve farmers' production problems.

CONCLUSIONS AND RECOMMENDATIONS

A successful case study of banana CF practices in Thailand was analyzed using a BMC to gain insights on how an agribusiness company linked small-scale farmers and key factors strengthening the linkages. The CF business model where private company contracts the farmer group also includes marginal farmers. It has achieved the best results in terms of net income received by farmers. This type of business model enables a farmer group, whose members are small-scale, to integrate into modern trade. The company provides high-quality banana shoots, extension and advisory services and supports post-harvesting facilities to farmer groups. Factors which strengthen the linkages are mainly: (i) commitments of the company, small-scale farmers, and management team of the farmer group; (ii) strength of farmer group;

(iii) honesty, transparency, trust, and good communication in production and purchasing system; and (iv) company's technical expertise, availability of extension staffs and the effective utilization of ICT.

The development of agribusiness linkages can be favored through the government's promotion of providing knowledge, information, and enhancing production, marketing, administrative, and entrepreneurial skills to small-scale farmers and farmer organizations.

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