

## Chapter 4

### Local market-oriented foreign investment in the food supply chain: Summary of issues for Myanmar

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#### Abstract

This paper argues the potential of local market-oriented foreign investment in high quality agricultural production in Myanmar. Operations for such investment comprise contract farming, technology transfer, marketing, and branding. Due to market imperfections in the rural economy and food supply chain, the market for high quality and safe food products hardly exists in Myanmar. This paper sheds light on how foreign investment could remedy the market's imperfections and thus create a market for such agricultural products.

#### 1. Introduction

While foreign direct investment (FDI) from the industrialized countries into developing countries in general is considered to stimulate the growth of the recipient economies, it is not always welcomed. This is especially the case for foreign investment that targets the local market of the recipient countries. A number of countries discriminated against local market-oriented foreign investment, while at the same time they favored export-oriented foreign investment. As long as there are local firms that would be crowded-out by foreign investment, they would lobby the government accordingly. Judging from the legislation process of Myanmar's foreign investment law in 2012, the same story applies.

Agriculture, regardless if domestic or foreign market orientation, is one of the areas where foreign investment is sought. Although the agricultural sector, in general in developing countries and in particular in Myanmar, has the potential for development (World Bank 2007), the agricultural sector faces a shortage of investment due to various market imperfections endemic in a rural economy.

This paper argues the potential for local market-oriented foreign investment in the food supply chain in Myanmar. Foreign investment in the food supply chain refers to the production and marketing of high value agricultural products produced by organic or

reduced agrochemical methods. It includes contract farming between foreign capital and local producers, transfer of technology, and marketing and branding of quality agricultural products. This paper clarifies the mechanism of how such foreign investment remedies the market's imperfections and creates markets for high value agricultural products in Myanmar.

The remainder of this paper is structured as follows. Section 2 presents the framework of the analysis, which illustrates the market imperfections in the rural economy and in the food supply chain. Section 3 summarizes how conventional contract farming functions as a remedy for the market's imperfections. Section 4 argues the differences between conventional contract farming and foreign investment-led high value agricultural production. Section 5 offers concluding remarks.

## **2. Framework of Analysis: Market Imperfections in the Rural Economy and the Food Supply Chain**

As the framework of the analysis, this section illustrates the market imperfections in the rural economy and the food supply chain. Subsequent sections will show how conventional contract farming and foreign investment-led high value agricultural production can remedy these market imperfections.

The food supply chain consists of farmers, processors, marketing agents, and consumers. Regarding farmers, a typical production unit comprises smallholders that possess cultivable land and use family labor. The distinction between processors and marketing agents is vague. Marketing agents include middlemen, wholesalers, and retailers. The structures of the marketing channels are diverse. On the one hand, the market is fragmented with many layers of agents. On the other hand, there is also a vertically integrated market channel represented by supermarkets where supermarkets are involved in the production, or in contract farming with the producers as well as in processing and sale of the agricultural products. As will be illustrated, market imperfections lie within the rural economy of the farmers, as well as in the relationships among farmers, marketing agents, and the consumers.

As illustrated by Ray (1998), there are various kinds of market imperfections in the credit, insurance, land, and labor markets of a rural economy. Firstly, credit market imperfections are defined as a situation where farmers cannot fully perform their production potential due to lack of finance for inputs such as seeds, irrigation water, fertilizer, hired labor, agricultural machines, and so on. Credit market imperfections

arise from the farmers' lack of collateral, or the absence of a mechanism to ensure that farmers can repay their debts. As a result of the credit market's imperfections, farmers cannot prepare sufficient input, and with the result is less production.

Secondly, an insurance market hardly exists in the rural economy of Myanmar. Insurance enables farmers to pool the risk of crop failure with insurance providers, which allows a smooth consumption path for them. Since crop failure risk among farmers is often correlated, it is difficult for an insurance provider within a rural village to diversify its risk, thus, insurance against the risk crop failure does not exist. At the same time, since it is costly to verify crop failures by rural village outsiders, it is also difficult for outsiders to provide insurance for farm crops. Due to the insurance market's imperfections, risk-averse farmers are reluctant to employ production technology or plant crops with a high yield variance, and are inclined to basic technology and stable yield crops. Similarly, they are prudent in employing new technology or new varieties of crops.

Apart from the market's imperfections in the rural economy, there are several market failures in the food supply chain as well. Firstly, due to asymmetric information between farmers and consumers about the quality of agricultural products, Gresham's Law may apply whereby low quality products with lower unit production costs drive out high quality products with higher unit production costs. For example, even if smallholder farmers produce high quality organic fruits, they usually do not have the means to prove the quality of their products to the marketing agents or to the consumers. In such a case, high quality organic fruits would be priced the same as for low quality fruits. Anticipating such a reaction by the market, the smallholders refrain from producing high quality fruits.

If marketing agents and consumers can easily differentiate the quality of agricultural products the problem due to asymmetric information are alleviated. In Myanmar, there are well-established wholesale markets for rice where the quality of rice is precisely differentiated. Accordingly, both high quality traditional varieties of rice with higher unit production costs, and low quality modern varieties with lower unit production costs are grown and sold in the market. There are large gaps in prices between tasty traditional varieties of rice and low quality high yield varieties.

By introducing quality grades and standards, the government or producer associations can alleviate the problem of asymmetric information. Such quality grades and standards are observed in industrialized countries. However, given the weak institutional capacity of the government, it would be difficult to immediately enforce such quality grades and standards in Myanmar.

In summary, farmers face various market imperfections in the rural economy and the food supply chain that reduce the market for agricultural products in terms of both size and variety. The following section examines how contract farming alleviates these market imperfections.

### **3. Contract Farming as a Solution to Overcome the Market Imperfections**

#### **3.1. Contract farming and the financial market's imperfections**

According to Eaton and Shepherd (2001: 2), contract farming can be defined as an agreement between farmers and processors or marketing agents regarding the production and supply of agricultural products with predetermined conditions in terms of prices and quotas. The agreement is often complemented with supply of inputs on credit from the sponsors (processors or marketing agents) to the farmers. The sponsors also provide technical advice about production.

Various processors and marketing agents take on the role of the sponsor, and various agricultural products are contracted in developing countries. The sponsor is usually a large-scale business in the processing, exporting, or marketing such as supermarket chain stores. As for the contracted goods, there are many cases of industrial crops such as coffee beans, tea, palm oil, rubber, poultry, and aquaculture, but in Myanmar, the examples are still limited. As for foreign investment, the C.P. Group of Thailand operates contract farming of hybrid maize. As for local capital, there are cases of contract farming of rice where the marketing agents provide quality seeds on credit and purchase paddy at predetermined prices.

Contract farming is considered as a solution for various market imperfections (Key and Runsten 1999). Contract farming can be viewed as a variant of a financial contract, and it would function as a remedy for the imperfections in the rural financial market. That is, the sponsor provides farmers with inputs on credit, and farmers repay the debt by surrendering the harvest at the price agreed in advance.

Why can contract farming reach smallholders who would otherwise not have access to finance? There are several reasons. One is that the contract farming sponsor can obtain more information on the agricultural production than outside moneylenders, so that he can evaluate the credit risk more precisely. Another is that if the sponsor is better informed about the production process and the quality of the products, he can quote a higher price than a third party in the free market, so that farmers would sell the products to him. This reduces the possibility of strategic default. For example, if the products are

organic fruits, contract farmers cannot prove the quality to other marketing agents or the consumers. In such a case, they would prefer to sell the produce to the sponsor.

Contract farming can be viewed as a risk-sharing device between the farmers and the sponsor. As the sponsor buys the product at a predetermined quota and price, it allows the farmers to hedge the risk due to changes in market conditions. The reduction in risk encourages farmers to employ new technology and new crop varieties despite the uncertainty of revenue.

There are several benefits for the sponsor to engage in contract farming. First, rather than doing the agricultural production directly, consigning the production to farmers allows the sponsor to partially hedge the risk concerning production. In addition, it is sometimes difficult for the sponsor to obtain title to the land for agricultural production. Second, contract farming allows the sponsor to procure agricultural products with relatively consistent quality compared with those procured from the spot market.

However, contract farming is not always immune to the problems of a financial contract. Farmers may default on the contract strategically. They may divert the inputs for their other crops, or they may report lower yields to the sponsor and sell the products partially to other marketing agents. Also, farmers may not provide the effort necessary to maintain the product quality, and consequently they produce lower quality products. Thus, such opportunistic behavior by farmers requires that the sponsor to monitor the production and harvesting for effective contract enforcement.

### **3.2. Contract farming and the farmers' income**

From the viewpoint of the farmers, contract farming does not necessarily improve their income. The sponsor may exert a monopolistic power over the contract farmers. If this were the case, the sponsor would give the contract farmers the lowest possible revenue that fulfills their reservation utility. That is, the sponsor would provide them incentive compatible profits that are just enough to retain them in the farming contract. It is true that contract farming alleviates market imperfections and makes the production and marketing possible that otherwise would not exist. However, how the profits are shared between the sponsor and the contract farmer is another issue.

There is criticism that contract farming still imposes a production risk on the contract farmers. Farmers face the risk of crop failure due to drought, flood, and pests. As they take inputs on credit from the sponsor, a crop failure could leave farmers indebted.

Whether contract farming raises the income of participating farmers or not is often investigated in literature.<sup>1</sup> One measure to evaluate the impact of contract farming is to

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<sup>1</sup>This includes Porter and Philips-Howard (1997), Key and Runsten (1999), Bolwig et al (2009), Miyata et al (2009),

compare the income of participating farmers with that of non-participating farmers. However, such comparison is misleading when the characteristics of farmers that influence the participation decision also govern their income. For example, if farmers with only fertile plots of land can join the contract farming process, their higher income relative to that of non-participating farmers cannot be wholly attributed to contract farming, but partially due to the fertility of the land. In addition, since the selling price is predetermined in contract farming, it would result in a lower price when the price has an increasing trend (Gulati et al. 2007).

There can be various forms of contract farming. In literature, there are a number of cases where contract farming raised the income of participating farmers, and there are also cases of the opposite occurring. In summary, it is not appropriate to generalize that contract farming is disadvantageous for farmers or not. The content of the contracts differs from one place to another. It may not be feasible for the government to regulate the content of the contracts since the government may not have sufficient information about contract farming. Instead, the government should encourage contract farming in any form. Thus, competition among contract farming sponsors would increase the demand for contract farmers, which in turn would raise the revenue of farmers.

#### **4. Targeting High Value-added Agricultural Products**

##### **4.1. The market for high quality agricultural products**

Regarding the production of high quality agricultural products, contract farming alleviates the problem of asymmetric information between the farmers and processors and/or the marketing agents. The sponsor (processor and/or marketing agent) has more information about the quality of the products than if he procured them in the open market. Thus, the sponsor can set a higher price to reward the quality, which enables the farmer to grow high quality higher cost products.

The key to the matter is the information asymmetry between the marketing agent and consumer, or in other words, how to convince a consumer to pay a premium price for a higher quality agricultural product. Unless consumers pay a premium, the contract farming of higher quality agricultural products is not financially viable for the sponsor. There are two issues involved here; one is the demand for higher quality and safe foods, and the other is how the contract farming sponsor proves the quality of the product to the consumer.

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Barrett et al (2011), and Bellemare (2012).

Firstly, the demand for high quality and safe foods grows in parallel with the population of higher income consumers (Roitner-Schobesberger et al, 2008). On the one hand, despite the national average GDP per capita being as low as USD 900<sup>2</sup>, there is a rapidly growing richer urban population that buys food from supermarkets in Myanmar. Furthermore, along with the opening-up of the economy, there is the risk of an influx of cheap pesticides into the rural economy, which endangers food safety and urges consumers to search for safer foods. These changes are expected to stimulate the demand for higher quality and safe foods in Myanmar.

Secondly, resolving the asymmetric information about the quality of agricultural products is challenging in the context of Myanmar, as there is no functioning certification body for food safety in Myanmar. For those agricultural products that consumers can differentiate the taste by eating (experiencing), there can be differentiated markets according to the quality of the foods. However, regarding food safety such as residues of agrochemicals, consumers cannot identify the quality of foods even after eating the foods. This type of product is called credence goods (Darby and Karni 1973). Without a scheme to resolve the asymmetric information about quality, there can be no premium paid for credence goods.

One solution to convince the consumer is private agri-food standards introduced by foreign investment (Henson and Reardon 2005). In the context of Myanmar, foreign companies are in an advantageous position to establish their reputation. Those foreign firms that have acquired a good reputation in foreign countries can be invited to invest in contract farming of higher quality agricultural production and supply in Myanmar. Such foreign investment should not cause a conflict with local farmers since the market for higher quality and safe agricultural products is still absent in Myanmar. Furthermore, the production and management of higher quality agricultural contract farming products is knowledge intensive in the first place, so that local firms alone cannot easily reproduce the operations of foreign firms.

#### **4.2. Promotion of foreign investment**

Compared with the local market-oriented foreign investment in higher quality agricultural production, there are relatively abundant cases of contract farming organic agriculture that target export markets from the developing countries to the industrialized countries. One reason is that there are more higher-income consumers in the destination markets of the industrialized countries who are willing to pay the premium.

Apart from the issue of market demand, are there any impediments to local

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<sup>2</sup> The figure is for 2011/2012, from IMF (2013).

market-oriented foreign investment in high quality agricultural production in Myanmar? One significant difference between the export oriented and local market-oriented investment in higher quality agriculture is that the former does not include marketing activities in the host countries whereas the latter involves marketing and commerce. Regulations on foreign investment are often operated in a vertically divided manner by the relevant ministries. As the activities of foreign investment in the food supply chain go across agriculture and commerce, they may face a dead end in the approval process in Myanmar.

## **5. Conclusion**

This paper considered the potential of foreign investment in contract farming of higher quality agricultural products. Due to market imperfections in the rural economy, the agricultural sector is short of investment. In addition, partially due to asymmetric information about the quality of agricultural products, the market for safe foods is almost non-existent in Myanmar. Foreign investment can fit into this niche and create a market for higher quality and safe agricultural products without creating any conflict with local firms. Contract farming alleviates the imperfections of the credit market in the rural economy. The private agri-food standards of foreign capital alleviate the problem of asymmetric information between marketing agents and consumers. How to promote such foreign investment remains a subject for further research.

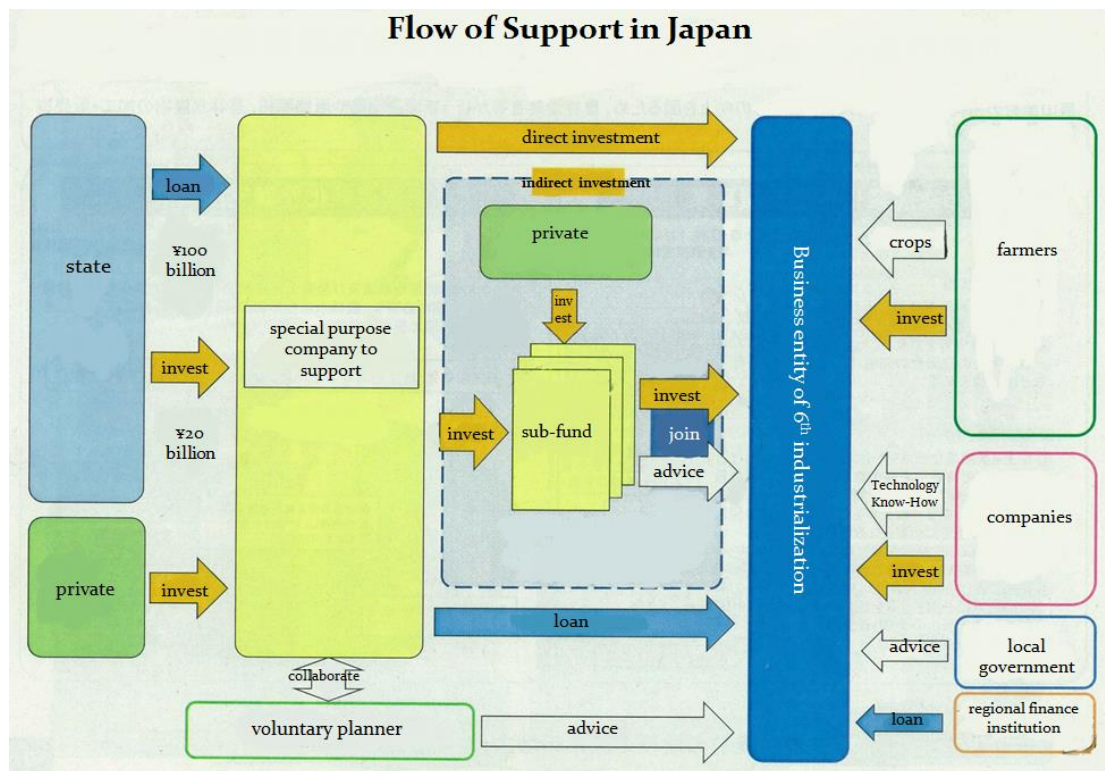


### **Box 1: 6<sup>th</sup> industrialization**

The Myanmar Comprehensive Development Vision (MCDV) formulated by the Economic Research Institute for ASEAN and East Asia (ERIA) and Myanmar's government in 2013, proposed an "Agriculture plus plus strategy" in which it mentions the 6<sup>th</sup> Industrialization of Agriculture as one of the measures to increase productivity by the agricultural sector, other than by using hybrid seeds, improving irrigation, and the input of fertilizers and so on.

The 6<sup>th</sup> Industrialization (1<sup>st</sup> industry times 2<sup>nd</sup> industry times 3<sup>rd</sup> industry) is the word created in Japan to explain the business model that is seen increasingly in the agricultural sector. It explains the interactive operations among the farming, processing, and distribution activities.

Specifically, a farmer joins in processing and selling, or a processor joins in growing or a distributor joins in farming and so on. In the last case, branding to differentiate their crops from others in the market is adopted as a common strategy by a distributor. In some cases, a farmer conducts a tourist business directly such as hotel or restaurant by making use of the beautiful landscape surrounding his farm. Such a variety of business activities crossing over three industrial sectors is combined in this business model. To handle the increasing interest in this model, the government of Japan promulgated a law on the 6<sup>th</sup> Industrialization in 2011 and started to provide support including financial subsidies (see figure below).



Source: Drawn in accordance with a material of Ministry of Agriculture, Forestry and Fisheries of Japan ([http://www.maff.go.jp/j/shokusan/export/e\\_conf/](http://www.maff.go.jp/j/shokusan/export/e_conf/))

It is observed that safer food, preservation of the environment, and contribution to rural development seem to be common ideas that are well received by consumers in the 6<sup>th</sup> Industrialization process. It is not an exaggeration to say that the consumer is ready to buy vegetables or processed food delivered with these messages at a higher price and this makes it possible to increase the value added at each stage of farming, processing, and distribution. By receiving such messages from the supply side the consumers realize that they are contributing the return to a sound society that has been abused by modern industrial technology. In other words, networking between the supply and consumer sides based on trust sustains the stable sales of crops or products of the 6<sup>th</sup> Industry as the final stage of the food chain.

This kind of business model has been extended to Thailand and has been well accepted by the middle and higher income class in Bangkok including foreigners living there. This shows that a growing interest is also being seen in Thailand regarding safer food, preserving the environment, and eliminating substances that could possibly harm the environment

In Myanmar, where abundant agricultural resources exist, this kind of business model that provides value added may pave the way towards substantial wealth creation in rural

areas, in parallel with the improvement of incomes in urban areas. Furthermore, if Myanmar becomes an agricultural country that produces safer crops, it would stand in a stronger position towards China as a supplier of safer food, facilitated by the better connectivity that is expected in the future.

(Case 1 in Thailand)

A Japanese businessman started an organic agribusiness 14 years ago. His company in Thailand was called *Harmony Life International* and purchased farmland in the KhaoYai highlands northeast of Bangkok, which is a popular area for tourists due to the cooler weather and beautiful nature.

The founder had a strong wish to contribute to a sustainable Earth and he started organic farming without using chemical fertilizers, insecticides, and so on. After overcoming various challenges, he is now harvesting a variety of vegetables and sells them mainly through his own shop in Bangkok. He has so far got about 1000 registered members as clients that support this ecofriendly concept to supply safer food. The Bangkok shop also has an adjacent restaurant.

*Harmony Life* also supplies a variety of processed products such as soap and shampoo and so on, that are made from the natural plants growing on the company's farmland without using surfactants that are not biodegradable in river water and could pollute it. It also produces a healthy drink and noodles using molokheiya that is accepted by Thai restaurants that buy more than 200,000 bags per month. Accordingly, *Harmony Life's* activity is typical of the 6<sup>th</sup> Industry cross-over concept of 3 industrial sectors.

It has extended the business to exports, accelerated by successful organic certification from the US, Germany, the EC, and Canada.

(Case 2 in Thailand)

In 2007 *Wagoen* in Chiba prefecture, Japan, invested in Thailand and established a company named *Otento* in Bangkok. *Wagoen* is an agricultural cooperative formed by 93 farmers in Chiba and is famous in Japan with a notable recycling business model. They sell their crops to consumers through supermarkets or various distributors and collect all vegetable waste and return it to farm where they use it as material for a biomass plant that produces electricity, bio-ethanol, and liquid fertilizer.

In Thailand, they started contract farming with farmers who shared their mission to provide safer food and transferred the technology and knowhow about growing

safer and tastier crops. They sell vegetables, mangoes, and bananas grown by the contract farmers in supermarkets in Bangkok in addition to exporting to Hong Kong, Singapore, and Japan. They have achieved consistent success and the key to success for this company can be analyzed by the brand name *OTENTO*, meaning sun, has been very effective to differentiate their vegetables from others in the shop.

It should be mentioned additionally that the technology and knowhow of the biomass plant at *Wagoen* has been successfully transferred to a cooperative palm tree plantation in Trang in Southern Thailand, and provides a constant revenue source from the sale of electricity to a local power grid that is generated using waste palm tree material.

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