

ORGANIC FOOD SUPPLY CHAIN RESTRUCTURING AND MARKETING DEVELOPMENT: THE ROLE OF SMALLHOLDERS AND MODERN SUPPLY CHAINS IN THAILAND

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ABSTRACT

Purpose: There have been many changes in agri-food systems in the last two decades, both in developed and developing countries. These changes were driven by forces, such as agricultural industrialization, globalization, trade liberalization, consumer's demands, safety and environmental concerns, and increasing role of information and logistics management. The food sector in Thailand undergoes two major transformations: "supermarketization" and the demand for organic and low-chemical products both from local and international markets. This presents threats as well as opportunities for smallholders. The standard set by buyers requires farmers to adjust their production and marketing systems. Assistance for farmers are derived from social enterprise and government and collaborations amongst these two parties.

Design/methodology/approach: A supply chain restructuring framework is used to analyze the participation of small-scale producers in schemes run by the social enterprises to assist smallholders with production and marketing.

Findings: This study, consequently, intends to explore empirically the pattern of agri-food (organic) supply chain restructuring and the role of social enterprises. The patterns of supply chain found in this study are substantiated and linked with the existing social enterprise and modern trade schemes to see whether there are inconsistencies in the policies and actual implementations.

Research limitations/implications: Focuses on the modern trade as the fastest growing segment in Thailand.

Originality/value: An enhancement of smallholders towards an integration of modern supply chain

Keywords: Organic food; Supply chain; Social enterprise; Smallholder

Paper type: Research Paper

Introduction

Agri-food systems (food chains)¹ have faced dramatic changes over the past two decades (Blandon, 2006). Scholars who are interested in these changes agree that forces and driving factors of these changes include agro-industrialization, globalization and multinationalization, advances in technology,

¹The definition of agri-food systems is adapted from Hobbs *et al.* (2000) with regards to the scope of the present study. Hobbs *et al.* (2000: 9) stated that agri-food systems can be viewed in terms of local as well as global "supply chains" or "value chains", which include "the entire vertical chain of activities: from production on the farm, through processing, distribution, and retailing to the consumer – in other words, the entire spectrum, from [farm] gate to [consumer's] plate".

trade liberalization and policies as well as changes in consumer demand, and growing influences of modern trade chains² (Saxowsky and Duncan, 1998; Brester and Penn, 1999; Reardon and Swinnen, 2004; Reardon and Berdegué, 2002; Bandon, 2006; Onumah *et al.*, 2007).

Agri-food systems that were based on traditional markets are now increasingly channeled through modern trade chains with new requirements on farmers, which result in alterations to traditional marketing relationships (Reardon and Barrett, 2000; Peterson *et al.*, 2001; Bandon, 2006). The development of modern trade chains in modern trade markets rely heavily on the successful management of their supply chains. Large firms with higher power in the supply chain usually have more negotiating power with their producers and suppliers, so they are able to cut cost and minimize risks in the supply chain than smaller firms (Brown, 2005). New business models have emerged to increase profits for shareholders and maintain an effective cost structure while consumers' demands have led to the emergence of measures to improve "flexibility through 'just-in-time' delivery, tighter control over inputs and standards, and ever-lower prices" (Brown, 2005). Modern trade markets can achieve competitive advantage due to their proper management of supply chains and their marketing strategies by means of market positioning, promotional activities and pricing strategies (Brown, 2005; McCullough *et al.*, 2008b; Singh, 2008). In addition, modern trade markets often demand greater flexibility and reliability of supply. They are likely to avoid storing large inventories of perishable products; at the same time, they need to make sure that store shelves are always fully stocked. For these reasons, modern trade markets are close attention to quality improvement and supply chain reliability; quantity, delivery and cost reduction are carefully managed and controlled. The modern trade markets have to constantly increase the efficiency of their supply chains to cope more efficiently with the intensified competitive environments in the industry (Neven *et al.*, 2004; Neven *et al.*, 2006).

In the case of Thailand, its rapid growth of the economy over the last few decades has led to a strong expansion of modern trade chains (Wiboonpongse and Sriboonchitta, 2004; Shepherd, 2005; Mingmalairaks, 2011). The role of social enterprises, in integrating small-scale farmers into modern trade chains in Thailand, has been a trend towards 'supermarketization'³. In addition, the growth of organic farming due to increasing consumer awareness of food safety was observed. The purpose of this study aimed to explain the current situation and development in agri-food systems and presenting the development of farmers' organizations and a modern trade, thus discussing the integration of small-scale farmers in modern supply chains in Thailand and how smallholders cope with the transformation of the food sector in Thailand. The study considered contract farming within the context of the value chain analysis framework. It employed in-depth case studies of social enterprises supplying produce to modern trade markets and small-scale producers under contract farming (social enterprise schemes).

Research Methodology

This study adopted mixed-method approach, which combines both qualitative and quantitative approaches. However, information presented in this paper was designed to utilise a qualitative approach to prepare information for the quantitative approach.

Qualitative data was adopted to develop a general mapping and characteristics of the agri-food value chain and the role of social enterprises in integrating small-scale farmers with modern supply chains in Thailand (Miles and Huberman, 1994; Silverman, 2009). A set of semi-structured question is used in the focus groups and in-depth interviews with key informants to gain more insight of what supply chain systems and kind of challenges or risk they are facing in supplying produces for modern trade chain. This information provided an essential input to design a survey for collecting quantitative data in a second phase.

In order to understand the farming and marketing systems, technology and environment context in supply chain management, a case study of organic rice producer under social enterprise scheme (Green Net Cooperative) was used in this study. A case study accepts and encourages multiple methods of data collection procedures, and it also provides a deeper understanding from the

²Modern trade chains can be grouped as supermarkets, hypermarkets, convenience stores, discount convenience stores, green/special shops, as well as export companies. This study refers to modern trade chains as supermarket chains to fit the context of Thailand.

³ "Supermarketization": Technical term to describe the evolution of modern trade

smallholders coping with food sector transformation. Furthermore, the information derived from qualitative approach was used to support and complement the quantitative results in the later phase.

The Retail Food Sector’s Transformation and Development in Thailand

The Thai retail food industry has changed drastically in recent years. Those changes have spread across developed as well as developing economies thanks to changes in consumer behaviour, evolving food safety and environmental concerns, increased importance of food quality, and the increasing role of information and logistics management (Reardon and Berdegue, 2002; Reardon et al., 2003; Brown, 2005; Shepherd, 2005; McCullough et al., 2008). It has experienced many of the same changes as those by some other countries. In past decades, Thai people bought food for their daily consumption from traditional markets such wet markets (fresh markets) and the local grocery store. The development of the retail food sector in Thailand can be classified into 7 periods as shown in Table 1.

Table 1: “Supermarketization” Timeline

Event	Year											
	1950	1964	1982	1983	1988	1989	1996	1997	2002	2003	2008	2011
Traditional Food Retail	■	■	■									
Development of Department Store		■	■	■								
Expansion Of Department Store to Suburbs				■	■	■						
Over-Investment in Modern Food Retail						■	■	■				
Economic Crisis Lead to Acquisition by Foreign Caompanies								■	■	■		
Development of Smaller Stores										■	■	■
Expansion Of Smaller Store to Suburbs												■

Source: By Authors

In addition, a close examination of the patterns of sales of foods in both traditional markets and modern trade chains between 2002 and 2010 shows that the proportion of food sold in the modern markets have been on the increase while that in the traditional markets have been in decline (Wiboonponse and Sriboonchitta, 2004; TDRI, 2002; Shannon,2009). For example, the percentage of foods sold in the modern markets rose from 35 percent in 2002 to 40 percent in 2007 and rose again to about 50 percent in 2010 while that of traditional markets dropped from 65 percent to 60 percent and about 50 percent in corresponding years respectively (Research Institute for Developing Thailand (2002); Wiboonponse and Sriboonchitta, 2004; Shannon (2009))

The accelerating rate of change and competitiveness in the retail food sector will drive the evolution of the retail food value chain over the next decade. Modern retail businesses have accelerated their expansion scheme to open more branches and new (mini) formats in an effort to obtain a larger market share. Most retail businesses follow a similar model of focusing on low prices, providing and a wider selection of products while meeting higher standards of quality. To achieve these goals, they have had to change their supply chain management systems. These changes affect both suppliers and producers, especially in agri-food supply chains where they must achieve higher standards and requirements which have become part of the modern trade market. The trends in retail food supply chain requirements in Thailand are summarized in Table 2.

Table 2: Trends in retail food supply chain requirements in Thailand

	Traditional Markets	Modern Trade Markets
Product - Production	<ul style="list-style-type: none"> - do not require contracts/agreements - prefer a short-run production and usually unplanned - do not have any specifications on diversification or intensive chemical/input use - do not require traceability and/or chemical residue check 	<ul style="list-style-type: none"> - require agreement or contract (can be formal or informal contract). - prefer long-run production under suppliers/organizations plan - have some specifications on farming systems and chemical/input used. - require product traceability and/or chemical residue (safety standard) check in most markets
Purchasing	<ul style="list-style-type: none"> - do not have regular order system 	<ul style="list-style-type: none"> - use regular order systems in advance
Purchasing Price	<ul style="list-style-type: none"> - use market price 	<ul style="list-style-type: none"> - use market price and price under contract farming scheme (usually higher than market price)
Procurement systems	<ul style="list-style-type: none"> - prefer traditional chains such as wholesale markets and direct chain from producers 	<ul style="list-style-type: none"> - prefer modern supply chains such as suppliers, brokers and social enterprise companies
Coordination	<ul style="list-style-type: none"> - use relationships or informal connections 	<ul style="list-style-type: none"> - use formal connection via contract or agreement (nowadays most are informal contract) - prefer company/organization/institution relationships along the chain

Source: By Authors

This study explores the changes in the agri-food supply chain and the difficulties faced by smallholders in Thailand because of these changes. This section explains the development of the agri-food supply chain and its effects on small-scale farmers and focuses on the results of focus group and in-depth interviews.

Agri-Food Supply Chain Restructuring and Effects on Small-Scale Farmers in Thailand

The main reason that induced most of the smallholders to sell their products in traditional (local) markets was because they had an easy access to the market and most of them had business experiences with local buyers. In addition, most farmers usually sold their produces in two ways. First, the farmers delivered or transported the produce to the market on their own or rental vehicles. Second, the farmers sold their produce to intermediaries who came to pick them up by their vehicles or they came to take the whole crops during harvest. The intermediaries usually made an agreement about buying and selling the whole crop in advance. However, this study found that most farmers lacked the ability to search for buyers and negotiation ability for an appropriate price.

The growth rate of agri-food sale in modern trade market has also been increasing each year with an average increases around 10 to 20 percent per year. Modern trade markets attempted to fulfil all customers' demands with notable changes in consuming behaviours. Therefore, the patterns of farm-shop linkages between small-scale producers and modern trade supply chain have to be developed (especially the department store owned by foreigners).

The findings from this research indicated four main traditional market chains can be identified; selling through intermediaries, selling at local markets, selling at traditional wholesale markets, and selling through minor markets. Several participants stated that which market suited a farmer, and which market a farmer decided to use, depended on farming and marketing potential and anticipated transaction costs.

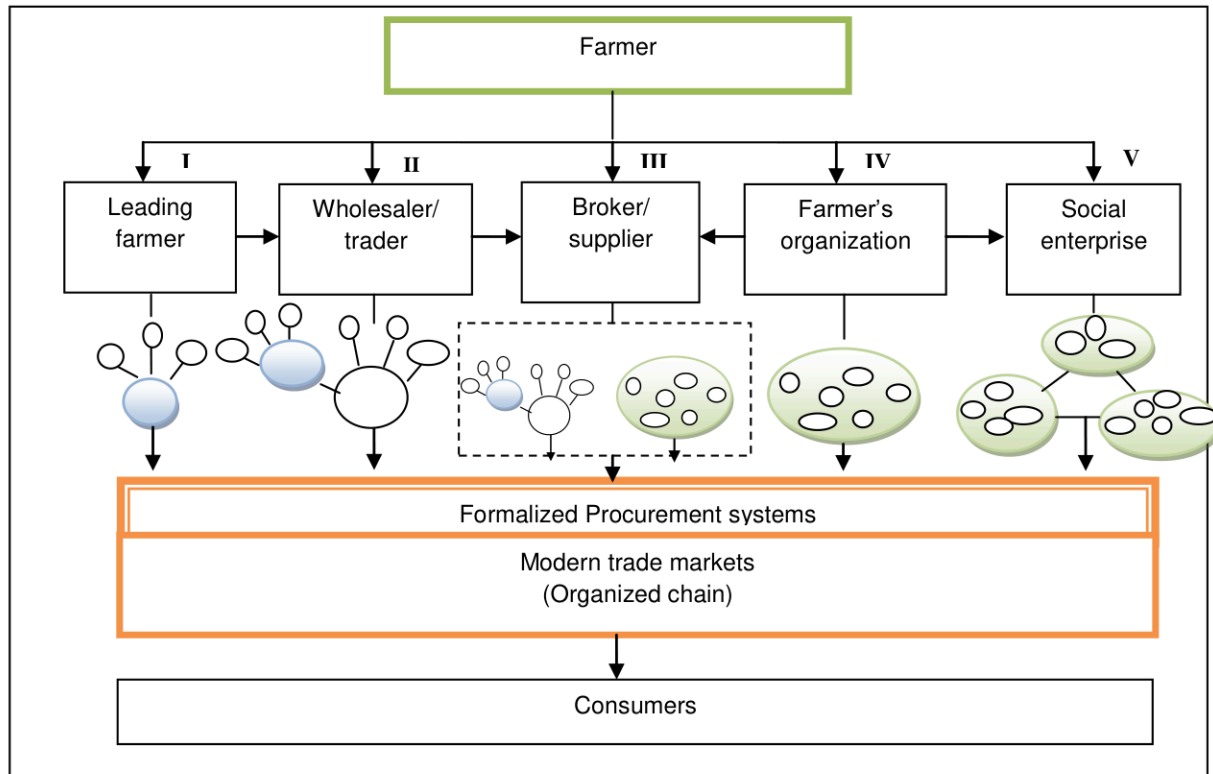
In-depth interviews with participants regarding the possible channels of small-scale farmers' participation in modern supply chains indicated that there are five potential channels; selling through lead farmers (high potential farmers/agribusiness farmers), using wholesalers/traders, using

brokers/suppliers, farmer associations/groups or social enterprises. However, the following section discusses the modern trade in forms of small scale farmer participation in the modern trade chains.

Small-scale farmer participation in the modern trade chains

This study found five channels of small-scale farmer participation in the modern trade as shown in Figure 1.

Figure 1: The channel of small-scale producer's participation in the modern trade chains



Chain V: Farmer => Social enterprise => Modern trade store or DC

There are farmers that participate in a group or farmers from the association in previous chain (V) to sell their produce to a social enterprise such as the Royal Project (pesticide-safe fruits and vegetables supplier) and Green Net (organic rice producer), who supply modern trade markets. These farmers are almost similar to the previous chain, but the farmer's association does not work individually and directly with modern trade markets. In this case, due to the lack of managerial and business management skills of farmer's associations, the farmer's associations form a group under the social enterprise organization in order to join in their production, grading, packaging, and marketing.

The study found that social enterprise helped small-scale farmers to improve their benefits in terms of profitability, stability as well as sustainability in the long-run participation. The collaboration between farmer's associations and social enterprise are more economies of scale. The farmers have higher negotiation power due to professional business management skills of social enterprise. Moreover, most social enterprises work with international organizations (for example fair trade organization) in order to join in the international and global trade systems. This cooperation helps small-scale farmers get a better price as well as increase their market opportunity.

Regarding five difference chains as mentioned previously, the study also provides a rough indication of which of these chains are relatively most crucial (largest proportion of small-scale farmers), and which ones are becoming more or less crucial over time as below.

In addition, regarding the information from interviews and group discussions with modern trade chains' representatives, currently, social enterprise has become more salient and increased its market share in organic or pesticide-safe products markets. As a result, the social enterprise has a strong supply chain management system to assure the quality of products throughout the supply chain before distributing the produce to the markets and finally to consumers. Another reason is the increasing number of organic and pesticide-safe products market share in modern trade markets. However, broker/supplier chain is still prominent in the products market.

The following table presents the advantages and five supply chains as perceived by modern trade markets in Thailand (which is based on interviews and group discussions).

Table 3: The modern trade advantage of five supply chains

Characteristics of supply channel required by modern trade		Supply channel				
		Through leading farmer	Through wholesaler/trader	Through brokers/suppliers	Through farmer's organization	Through social enterprise
Capacities	Production					
	- Control of quality and quantity of produce	✓		✓✓	✓	✓✓
	- Financial and farm managerial capacity		✓	✓✓	✓	✓✓
	- Control of farming contract violate			✓✓	✓	✓✓
Incentives	Operation Management					
	- Price plus transaction costs	✓	✓✓	✓	✓✓	✓✓
	- Delivery and logistics	✓	✓✓	✓✓	✓	✓✓
	- Reliable supply		✓✓	✓✓	✓	✓✓
	- Tractability	✓		✓		✓✓
	- Managerial cost		✓	✓		✓✓
	Business Cooperation					
	- Control of business agreements and conditions	✓		✓✓	✓	✓✓
	- Terms and conditions negotiation	✓	✓✓	✓✓	✓	✓
	- Control of farmer remuneration				✓✓	✓✓
	- Corporate social responsibility				✓✓	✓✓
	- Sustainable for long-run cooperation and supports			✓✓		✓✓

Source: By Authors

Advantages and challenges associated with the modern trade chains

The traditional market is highly uncertain, farmers are never sure if they will find a buyer of their products, and what price they will get. Whilst markets in modern trade chains are highly certain; the farmers can be confident in participating if their produces are sold. Even though the production for most modern trade chains nowadays does not use formal contract or agreement with small-scale farmers, the small-scale farmers can still be confident to participate in and keep working with their productivity and quality adjustment until it meets the standards. Most modern trade chains provide some supports such as information about products demanded, technology and farming management skills training to help farmers develop their producing and marketing systems. Thus, modern trade chains allow farmers to enhance the planning of their production and marketing activities; for example, dates of planting, harvesting, delivering, and expected cash flow. The study also found differences in principal characteristics of small-scale farmers' participation in the different market chains which affected the level of farmer's advantages.

Prices in the modern trade chains are characterized for being more stable permitting farmers to forecast expected returns, which helps them in their planning activities. Additionally, prices in modern

trade chains are usually higher than average prices paid in the traditional market (depending on grades and standards) which results in better profit margins for farmers participating in the modern trade chains.⁴ Prices in the traditional markets may be higher during a short season in a year, motivating contracted farmers to 'side-selling' their produce to this market instead of delivering to the modern trade chain as set in contracts.

Conclusions

In this paper, we observed the general overview of the retail food sector's transformation and the challenges faced by small-scale farmers in Thailand. In addition, social enterprises and their pivotal roles in integrating small-scale farmers into modern trade chains, in Thailand, are also explored. It can be concluded that though the majority of agri-food is channelled through traditional markets, modern trade chains are expected to replace them and will continue growing because of the influence exerted by the local and international retail chains in the region. As a result from these changes in the agri-food system, modern retail businesses have accelerated their expansion scheme to open more branches and new (mini) formats to try to gain a larger market shares. Modern trade chains are offering new market opportunities to farmers.

Moreover, six main channels for small-scale farmers to use to gain participation in modern trade chains in Thailand were identified; directly sell to markets, selling through lead farmers, wholesalers/traders, brokers/suppliers, farmers associations and through social enterprises. Currently, the social enterprise chain has increased its market share and is pivotal in the organic and pesticide-safe product market. Furthermore, more small-scale farmers participate in the modern trade through participation with social enterprises than with any other modern trade chain. This study also found that social enterprise schemes have several significant roles in increasing the profitability, the stability and the sustainability of small-scale farmers' production and participation in the modern supply chains.

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⁴ This is based on interviews with farmers, and therefore no quantitative data is available to verify

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