Supply Chain Characteristics of Certified Organic Rice in Yasothon Province, Thailand

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Abstract

The objectives of this study were to investigate supply chain characteristics to sustain the production system of certified organic rice producing farms in Yasothon province, Thailand to the export market. The sample group consisting of 328 farmers practicing organic rice farming were selected by the purposive sampling technique. The data were collected through a field survey, interviewing representatives of main actors in the supply chain such as the leader of an organic rice growing farm from 11 groups, the collector/processor, and 3 of the exporters. The data was collected from group discussions with the deputy governor, standard auditor (ACT), and members of the farmer group and then analyzed. The farmer sage was used as a tool for establishing strategic plans, suggesting guidelines for developing organic agricultural producer strategies in the supply chain of Yasothon province, Thailand. The results showed that the characteristics of the organic rice supply chain in Yasothon were shorter than conventional rice. However, the data revealed that the current situation of the supply chain in the focused area predicted the highest 70% of the total produce annual export of organic rice to United States of America, Singapore, and European markets apart from the domestic market which constitutes 30% of the total produce. Besides, the Yasothon model has two important components which are 1) strong original capital 2) join forces with the driving force forward.

Keywords: Rice supply chain, Certified organic rice, Rice production system, Organic rice-producing farms

Introduction

Thailand is an agricultural country. This can be seen from the statistics report, depicting quantities, and values of the country's exports from the Ministry of Commerce of Thailand website. Rice is an important economic crop that generates income for the country not only general rice but also organic rice. Also, rice is a staple food for Thai people and people in many countries around the world. In 2017, Thailand expanded its organic production areas from 6,400 ha to 16,000 ha. Given that the current and emerging trends of organic rice production, government agencies continued facilitating farmers to fulfill control and monitoring based international standards of organic agriculture such as the International Federation of Organic Agriculture Movements (IFOAM), the United States Department of Agriculture (USDA), and the Organic Standards of the European Union (Council Regulation; EC). Moreover, a separate body of related agencies

such as the Rice Department, the Ministry of Agriculture and Cooperatives in association with the Ministry of Commerce allows for the use of organic rice certification marks to the selected organic rice-producing farms (Department of Foreign Trade, 2019). Therefore, the Department of Internal Trade, Ministry of Commerce in line with the Twelfth National Economic and Social Development Plan (2017-2021) aims at strengthening the economy and underpinning sustainable competitiveness by promoting organic agriculture and farmers in pilot areas.

Supply chains of organic rice products are often considered as alternative supply chains to shed light on current production to market conditions because of being shorter, locally oriented, and in which producers and consumers are more closely connected, than those in the conventional rice supply chains. Therefore, supply chain management of the organic rice production in Yasothon province is required to be studied to create stable and sustainable production systems for the members of farmer groups (Kerdsriseam and Suwanmaneepong, 2015; Kottila, Maijala and Rönni, 2006).

The present study attempts to evaluate the supply chain characteristics and to assess the current market situations of organic rice production. Under the assumption that the supply chain of organic rice has been certified by international standards, Yasothon province has a supply chain characteristic that is not different from the supply chain of organic rice. Also, the results of this research are expected to be applied to relevant agencies that can be a useful information for organic rice farming and may be beneficial in developing a plan to promote organic rice production in the country.

Research aim

To study supply chain characteristics with aim to sustain the production system of certified organic rice producing farms in Yasothon province to the export market.

Methodology

The methodology by conducted in-depth interviews, observations, and focus groups as shown in the diagram (Figure 1) with farmers and stakeholders. The objective of this paper which focuses on studying supply chain characteristics to sustain a production system of certified organic rice-producing farms in Thailand to organic rice export market was fulfilled by synthesizing the data collected from the certified organic rice-producing farms that lead to the development of the model (Figure 1).

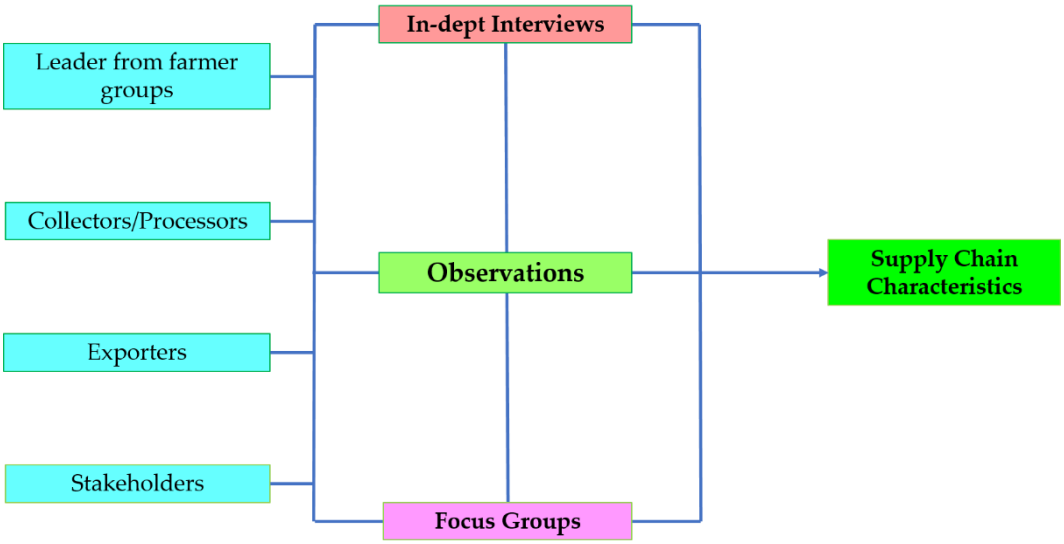


Figure 1. A flowchart of data collection process

To achieve the goals of this study, an in-depth interview was conducted to collect data from seven districts in Yasothon province, located in the northeast of Thailand namely KutChum, MahaChanaChai, PaTiu, KhoWang, LoengNokTha, SaiMun and Muang due to immense significance of this area in rice production. Organic rice growers were mainly those who are members of certified organic rice group as the agricultural production is well organized. The production management has complied with the Organic Agriculture Certification Thailand (ACT) standard for 11 groups of farmers amounting to 1,181 farmers from seven districts and the cultivated area was 2,485.6 ha. (Yasothon Provincial Office, 2018). The data were collected using questionnaires and interviews with the certified organic rice farmers from November 1, 2017 - March 30, 2018. A total of 328 farmers practicing organic rice farming were selected by the purposive sampling technique.

Seven districts of Yasothon province in Thailand were selected due to immense significance of this area in rice production. All data were collected through a field survey, by interviews of representative of main actors in the supply chain such as the leader of organic rice growing farm from 11 groups presented in Figure 2. The data were analyzed by synthesizing from group discussions with the deputy governor, standard auditor (ACT), member of the farmer group and farmer sage (Figure 2) was used as a tool for establishing strategic plans, suggesting guidelines for developing organic agricultural producer strategies in the supply chain of Yasothon province, Thailand.

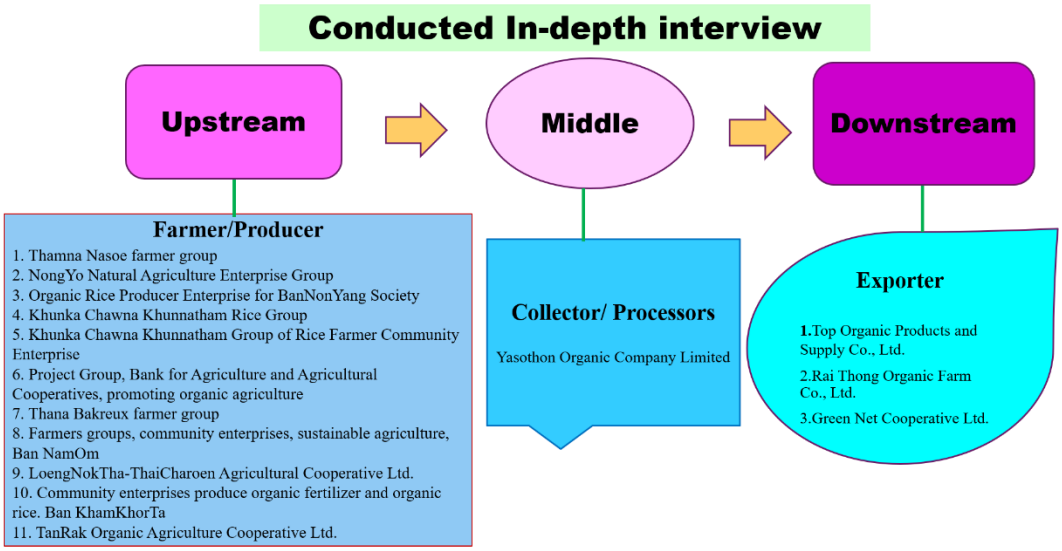


Figure 2. Conducted In-depth Interview

1. In-depth interview and observation

Each interview took one to three hours and was semi-structured. During the interview, nine specific issues were covered i.e.: actor's position in the chain, commitment to the upstream; production function, middle stream; harvesting/product processing and downstream; marketing, domestic, and export. The efficiency of information flow, as well as the relationships between the actors and the performance of the chain. All interviews were recorded and transcribed. The interviews were conducted during December 2018 to February 2019. Moreover, focus group discussion was conducted among a representative of participants and stakeholders along the chain, the government agencies, and private sectors which were common about supply chain characteristics of certified organic rice (Figure 2, 3).

To deepen the understanding of the demand-supply chain of organic rice, case studies by conducting interviews were carried out with a qualitative approach. The focus was kept particularly on the information management as it presents the key to improved performance. To gain information on the flow of materials and the associated information supply chain characteristics were divided into (upstream) which means activities that are linked to raw materials (from growers), a middle stream which means bringing the results from the upstream activities to the production level (distributors/collectors) and downstream which means bringing results from the middle stream to be updated into products or services distributed to consumers (whole seller/consumers).

Figure 3. In-depth Interview with stakeholders

2. Focus group discussion

Focus group with stakeholders in the supply chain of organic rice were Deputy Yasothon Governor, Exporter, farmers members of the organic rice growing group, Auditor Organic standards (Organic Agriculture Certification Thailand), Inspector Systems Group, etc. as shown in (Figure 4).

Figure 4. Focus group on guidelines for driving the organic rice production system of Yasothon province

Results

The supply chain of organic rice in Yasothon province had many actors from the upstream organic rice growers to the downstream distributor and then to the customer (Figure 5). These activities were linked together across the supply chain from the upstream to the downstream with the following sub-sectors:

1) The Upstream was divided into two groups;

(a) Contact farming; 8 organic rice farmer groups were found to be engaged with contact farming practices as the basic supplier of paddy. All of them were found to be having a common organic rice gathering point for members of the farmer groups. These farmer groups were consisted of only those farmers where organic rice farming cultivation was done by use of green manure, compost, and the approved natural organic substances, while without any use of chemicals, chemical fertilizers, and pesticides including that insecticides, fungicides, and herbicides. Data revealed that most organic rice production was randomly verified by the internal audit committee in compliance with Organic Agricultural Certification Thailand (ACT) standards. The results of in-depth interviews revealed that most of the amount (50%) of organic rice production was sold to mill of exporter/contractors while, 30% amount of organic rice production was sold to farmers group collectors (which involves the processing of paddy rice by their own rice mills and after that gone through the processes of packaging to exporters) and exporters and the remaining 20% within contact farming was sold to general mills/others.

(b) Independent farmer groups; 3 farmer groups were found to be operating under the umbrella of independent farming groups. The cultivation practices and conditions in these farms were also the same as that of contact farming groups. Independent farmer groups were found to be having two characteristics certifications for organic rice examination. The first type was a random check by the Internal Audit Committee following the participatory certification system (Participatory Guarantee Systems: PGS), received support from the International Federation of Organic Agriculture Movements (IFOAM). The second type was a random examination by the faculty of the Internal Audit Committee in association with the Organic Agricultural Certification Thailand (ACT) standards. The results of in-depth interviews revealed that most (70%) of organic rice produce was sold to farmers group collectors and exporters. Whereas, NongYo group had their rice mills that sell paddy to exporters and the LoengNokTha group also had their rice mills which involves the processing of paddy rice and after that gone through the process of packaging to the consumer. The remaining 30% of organic rice production was sold to general mills/others (Figure 5).

2) The Middle stream was divided into three groups;

(a) Mill of farmers group collectors and exporters whose operation process involves the collection of organic rice production from farmers (who are members of the group) to be distributed directly to exporter viz Green Net Co., Ltd. In this regard, Green Net Co., Ltd., provides support to operational factors for members with contract farming (NaSoe and BakReux), such as quantity loans to collect and buy rice at a price higher (2 THB/kg) than the general market price. Moreover, they provide support on principle of knowledge about organic rice production to fulfill the standards that apply for certification and implementation of internal control systems and give premiums to the

group for welfare benefits as well. The results from in-depth interviews revealed that most of the organic rice accounting for 70% was received from the upstream viz contact farming group and 30% was received from independent farmer groups.

(b) Mill exporter/contractors viz Rai Thong Organic Farm Co., Ltd. had a role in purchasing the organic paddy produce from a contact group (KaowKhunNaTham) transporting to their rice mill and then will pass through the packing process of brown rice in a vacuum bag for exports to Singapore which is the main export market. Besides, there was a team of promoters that provide knowledge on organic rice production according to the requirement of standards. Whereas, Ban TonKaow Organic Farm Co., Ltd. played a role in purchasing the organic paddy production having an agreement in advance from groups such as ChawnaKhunnatham Community Enterprise, KhamKhorTa and Project Group, Bank for Agriculture and Agricultural Cooperative, which after purchasing and collecting organic rice products, transport them to the warehouse to wait for the delivery to the exporters. Further, Yasothon Organic Co., Ltd. found to be providing services in the drying bin plant to reduce fresh rice moisture after harvesting to 14-15% under the standards. Also, there is a policy to collect and purchase organic rice in the transition period, which is purchased at a price that is higher than the general price of rice and proceeds to the consumer market. The results of in-depth interviews revealed that 50% certified organic rice was received from the upstream viz contact farming group.

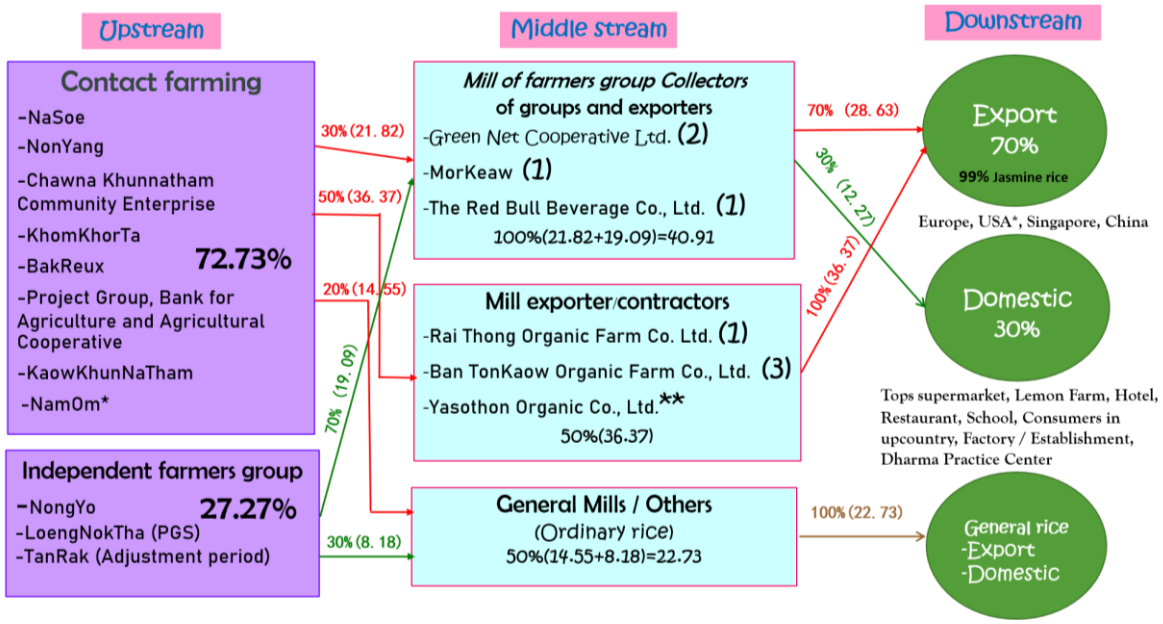
(c) General Mills/others were found to be having a role in the operation process of purchasing paddy at the market price. The paddy that was purchased brought through the milling process as rice for delivery to both domestic and foreign wholesalers in the manner of general rice. The results from in-depth interviews revealed that 30% of produce was received from upstream via independent farmers group and contact farming accounted for 20%,

3) The downstream was divided into three groups;

(a) Export market; includes the certified organic rice from the mill of farmers group collectors and exporters which was certified by international standards. The results from in-depth interviews revealed that most of the organic rice accounting for 70% was being exported to the market. Whereas, the certified organic rice from the exporter/contractors accounted for 100% to the export market. The main exported markets were Europe (EU), the United States (USA) and Singapore. Additionally, it was found that most exported organic rice was jasmine rice that accounted for 99% of total export.

(b) The domestic market includes the certified organic rice from the mill of farmers group collectors and exporters namely MorKeaw and The Red Bull Beverage Co. Ltd., accounted for 30%, to domestic markets such as Tops supermarket, Lemon Farm, Hotel, Restaurant, Schools, Consumers in upcountry, Factory/Establishment, and Dharma Practice Center.

(c) General rice includes the certified organic rice from the mill of general mills/others accounted for 100%, to general export rice markets and general domestic rice markets such as Europe, China, USA, Japan, Australia, Benin, Singapore, and others.



* Upstream to midstream as a percentage of paddy.

** Midstream to downstream as a percentage of milled rice.

Figure 5. An organic rice supply chain for Yasothon province

Discussions

The results showed that activity was linked together across the supply chain from the upstream to the downstream and was divided into 3 sub-sectors. These results are advocated by the findings in Chachoengsao Province of Thailand (Kerdsriseam and Suwanmaneepong, 2015). The organic jasmine rice commodity chain is based on the re-arrangement of the conventional rice commodity chain (Taotawin, 2011) with features such as characteristics of the organic rice supply chain that it has a shorter structure than the supply chain of general rice (Kottila, Maijala, and Rönni, 2006). Furthermore, the results showed that 70%, of organic rice produce of Yasothon province, was exported to markets in the United States of American, Europe, and Singapore which corresponds to the previous study by Yotkaew (2017). Whereas, the amount of organic rice sold in the domestic market remains at an average of 30% which is consistent with the study of Ruenglertpanyakul (2016).

Conclusion

Farming activities were linked together across the supply chain from the upstream to the downstream and were divided into 3 sub-sectors 1) Upstream was divided into two group; Contact farming; nine certified organic rice grower groups as the basic supplier of paddy from a member of

a group, once a year. And independent farmer groups; three organic rice grower groups as the basic supplier of paddy from a member of the group, once a year, 2) Middle stream was divided into three groups; Mill of farmers group collectors of groups and exporters which operation process involves the collection of organic rice product from groups, distributed directly to exporter or personnel in the industry of domestic entrepreneurs, Mill exporter/contractors, and general mills/others, 3) Downstream define as a market was divided into two groups; Export market; It was found that most of the organic rice of Yasothon province is exported to markets in the United States of American, Europe and Singapore which accounts for 70% and Domestic market; It was found that the organic rice in the domestic market accounted 30%.

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