



## **THE ROLES OF AGRICULTURAL COOPERATIVES IN CERTIFICATION AND PRODUCTION OF GEOGRAPHICAL INDICATION (GI) RICE IN THAILAND**

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### **ABSTRACT**

*Hom Mali rice or Jasmine rice from Thailand has been reputable for its strong aroma and soft texture, and perceived as high quality in the world market. With increasing demand for high quality products from rice consuming countries, the competition for Hom Mali rice has been escalating by exports of Jasmine-type rice from competitors. Thung Kula Rong-Hai area, located in the Northeast Thailand where most farmers are smallholders and poor, is famous for high quality and prominent aroma Hom Mali rice. To provide the origin information and differentiate Thailand's Hom Mali rice from competitors, in 2006, Thung Kula Rong-Hai Hom Mali rice was registered as Geographical Indication (GI) by the Department of Property Rights, and in 2010, it was registered as Protected Geographical Indication (PGI) by the European Commission. This paper investigates the roles of agricultural cooperatives located in Thung Kula Rong-Hai areas in facilitating the GI certification and production process. It is found that agricultural cooperatives are important intermediary in connecting farmers to high quality product market.*

**Keywords:** Geographical Indication, GI, Protected Geographical Indication, PGI, Hom Mali rice, Jasmine rice, cooperatives, Thailand

### **INTRODUCTION**

Aromatic rice, specifically Basmati rice (hard varieties) and Jasmine rice (soft varieties), is generally preferred in the international markets (Custodio *et al.* 2016), and fetches considerably higher price than normal white rice. Prior to 2007, Thailand was the only exporter of Jasmine rice. As the demand of high quality rice is increasing in rice consuming countries, especially among high income countries and high income consumers, several rice exporters started to direct their policy towards expansion of

aromatic rice production. Thai Hom Mali rice or Jasmine rice from Thailand has set an excellent reputation in the international market for several decades due to its unique aroma, soft and sticky quality as preferred by consumers from rice eating countries (Suwannaporn and Linnemann 2008).

Thung Kula Rong-Hai (TKR) located in Northeast Thailand is known among Thai consumers that it is the area where the premium Hom Mali rice is produced due to the nature of the soil, quality of the water used, number of hours of sunshine, narrow range of temperatures, cool dry weather in the harvesting season, etc.) The area extends across five provinces make up to about 337,000 ha. Yoshihashi *et al.* (2004) found that Hom Mali rice produced in the rain-fed area of TKR has higher 2AP (the volatile compound constitute in aromatic rice) than the same rice produced in other areas. In other words, Hom Mali rice from TKR has a more prominent aroma than the same rice produced elsewhere. Due to its reputation and to protect Hom Mali rice produced in TKR from its competitors, Geographical Indication (GI) is one of the ways to protect the products that have quality or reputation attributable to its geographical origin (World Trade Organization 1994). A GI is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin, and those who have the right to use the GI can prevent its use by a third party whose product does not conform to the applicable standards (World Intellectual Property Organization). Khoa Hom Mali TKR, literally translated into Hom Mali rice in crying Kula plain, was registered GI by the Department of Property Rights, Ministry of Commerce of Thailand in 2006, and later registered Protected Geographical Indication (PGI) by the European Commission in 2010. The motivation to use GI to protect TKR Hom Mali rice is not only to differentiate the products with outstanding characteristics specific to the TKR plain, but also to help the development of the community in TKR plain through quality recognition and premium price of GI products. Farmers who produce Hom Mali rice in TKR plain and fulfill the standards set out in the Code of Practice (CoP) for the GI will be certified and have the right to use GI sign. They can to exclude the use of the term “Thung Kula Rong-Hai” from Hom Mali rice produced in other areas or not produced according to the CoP.

Although the GI certification is one of the ways to build quality recognition and bring more benefits to farmers in this geographical area, the adoption of GI certification is still limited. Ngokkuen and Grote (2012) found that one of the limitations of adopting GI certification is the access to the market. Due to large area of TKR, farmers bear high cost of transportation to deliver the paddy to certified GI buyers or millers. As farmers have choices to sell rice to different buyers such as, agricultural cooperatives, middlemen, private rice mills, government and certified GI rice buyers; even if they are located in the geographical area of TKR, they may not have incentives to sell the products to certified GI millers in remote locations unless the transportation cost is compensated by price premium of certified GI products. Furthermore, in this study, they found that access to information about GI and being a member of agricultural cooperatives significantly affected the adoption of GI rice production. Thus, this paper aims at exploring the roles of cooperatives located in the TKR plain in the production and certification of GI Khoa Hom Mali Thung Kula Rong-Hai.

## GI THUNG KUKLA RONG-HAI HOM MALI RICE PRODUCTION

Thung Kula Rong-Hai is a large plain extending across five provinces in Northeast Thailand, namely Roi Et, Maharakam, Surin, Yasothon and Srisaket (Fig. 1). It covers a total of 337,230.40 ha (European Commission, 2010). The main crop produced in this area is Hom Mali or Jasmine rice. In order for Hom Mali rice to be GI TKR, the production has to be performed according the Code of Practice (CoP) which describes the manner of production, requirements for processing, and packaging resulting from a consensus among the stakeholders in the value chain concerned with the GI. Two photoperiod-sensitive varieties, namely KDML 105 and RD15, constitute Hom Mali rice. It has to be produced from seeds obtained from the Rice Department or rice grain producers, i.e. farmers' organizations or private organizations certified by the Rice Department based on the standards for rice grain production, cultivated during the rainy season, and the whole of the production process from sowing to harvesting must take place in the defined geographical area. Furthermore, the processing has to take place in the five provinces of the TKR area.

To ensure the quality of GI product, one important element in the CoP is the control plan which describes how the controls will be used and when needed, the certification system. The control system of GI TKR Hom Mali rice could be through self control, internal controls or external control system. Under the external control system, the Certification Body (CB) has a responsibility to perform GI control on behalf of the Department of Intellectual Property. Under the internal control system, the GI committee at provincial level has a responsibility to inspect the operation of producers, processors, farmers, and industries that have a self-control system. For the self-control or auto-control system, producers, processors, farmers, and industries have to control themselves following production manual.

Certification of GI products is the most commonly used and required verification system in international markets for which producers have to pay for the services (inspection and certification) (Vandecandelaere *et al.* 2009). For Thai GI certification, the stakeholders have to follow the production manual consistent with the CoP, and have a control plan at provincial level or producer level. The certification of Thai GI is valid for two years. The EU PGI certification, however, requires that the production process has to be done only through third party CB who has met ISO 17065 standards. A CB certification for GI TKR Hom Mali rice involves an independent and external body (i.e. Bioagricert) that has no direct interest in the economic relationship between the supplier and the buyer and which provides assurance that the relevant requirements have been followed. The certification of EU PGI is valid for one year.

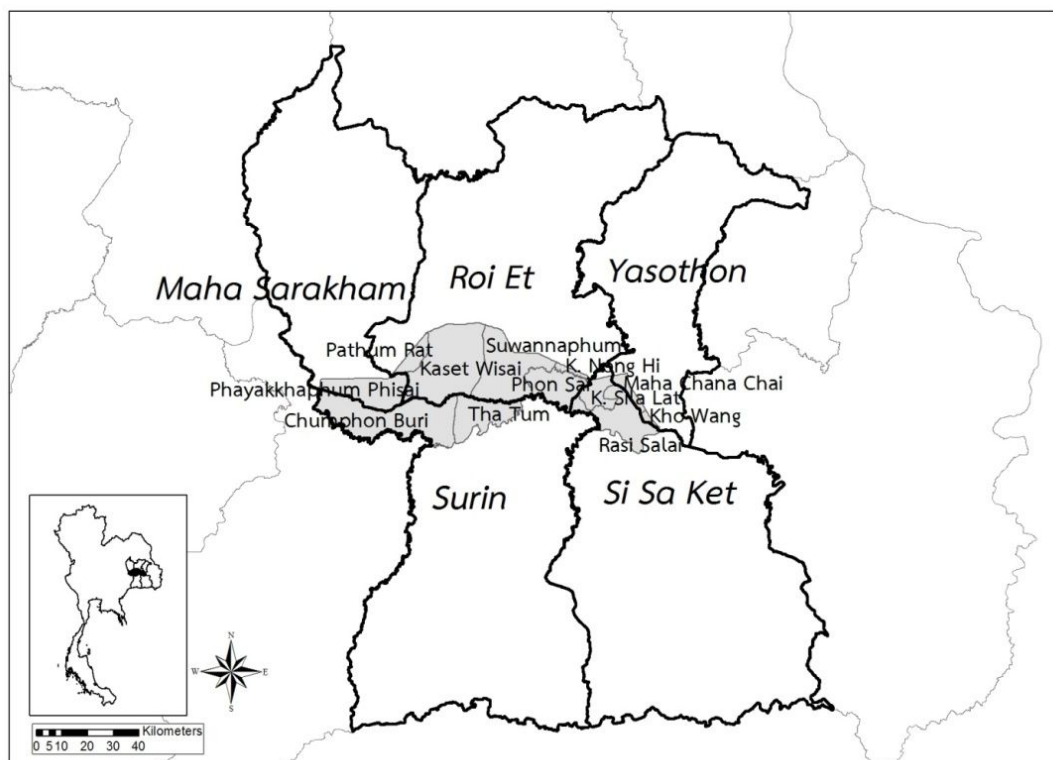


Fig 1. TKR plain in Thailand

Note: Shaded area represents the location of Thung Kula Rong-Hai and the thickened lines demonstrate provincial boundaries of Roi Et, Mahasarakham, Surin, Yasothon and Srisaket provinces

#### AGRICULTURAL COOPERATIVES IN THUNG KUKLA RONG-HAI RICE CLUSTERS

The study by Ngokkuen and Grote (2012) regarding the adoption of GI certification by rice farmers in TKR in 2009 suggested the GI registration and institutional framework as illustrated in Fig. 2. Under this framework, the agricultural cooperatives were one of the key stakeholders in the Hom Mali rice production in TKR along with rice mills and other rice processors. Their study also found that being a member of agricultural cooperative also influenced the adoption of GI TKR Hom Mali rice certification. The producers of certified GI TKR Hom Mali rice consists of rice farmers, collectors, millers, packing houses, marketing mediators and distributors (Fig. 3). Under geographical indication rice standard of Thailand, certified GI farmers have to also meet either Thailand's organic or Good Agricultural Practice (GAP) standards (National Bureau of Agricultural Commodity and Food Standards, 2014). The certified GI collectors and millers (who also usually carry out packing and labeling) have to meet requirements in the CoP. The milling and packing can be taken place in the five provinces of the TKR area, but not necessarily in the TKR itself.

Agricultural cooperatives have played an important role in the production of GI TKR Hom Mali rice, especially under the cluster. Cluster is the geographic concentration of interconnected companies and institutions in a particular field (Porter 1998). The main

advantage of a cluster is to enhance productivity i.e. better access to farmers and access to specialized information regarding the production and markets of the Hom Mali rice products. In 2004, the government has initiated “*Production of Thung Kula Rong-Hai Hom Mali Rice for Exports*” project. The initiatives of this project were collaborative efforts among several organizations under the Ministry of Agriculture and Cooperatives (MOAC) including Land Development Department, Royal Irrigation Department, Department of Agriculture, and Rice Department, Department of Agricultural Extension, and Cooperative Promotion Department. Following this project, between 2009 and 2010, the Cooperative Promotion Department has established the “*Thung Kula Rong-Hai Hom Mali Rice Cluster Development*” project to enhance rice production efficiency and development rice products to meet the markets demand, and, in turn, contribute to increases in incomes and livelihoods of farmers. The members of *Thung Kula Rong-Hai Hom Mali Rice Cluster* consist of 20 agricultural cooperatives. After a few years of collaborative efforts among member cooperatives, and with advice from local universities, namely Khon Kaen University and Maha Sarakham University, and supports from the MOAC i.e. seminars, training, the cluster has improved their rice production performance via a better understanding of the market, and rice production knowledge. Furthermore, the export market channel was widening through an arranged supply for major rice exporters. The revenue of the cluster’s cooperatives members increased from about 2.62 million USD in 2006 to about 5.57 million USD in 2010 (Bangkok Business News, 2011). Several collaborative efforts were initiated such as sharing the rice supply orders, taking advantage of milling and processing capacity of cooperative members and access to the members’ market network.

In addition, as nearly half of TKR area is located in Roi-Et province, the *Roi-Et Hom Mali Rice Cluster* was also established in February 2010. The Roi-Et Hom Mali Rice Cluster includes not stakeholders located in TKR area, but the whole province. Twenty seven agricultural cooperatives, five community enterprises, and one private company were members of Roi-Et Hom Mali Rice Cluster. The goals of this cluster are not only to enhance competitive advantage of Hom Mali rice, but also to create a network of production, processing, and marketing of all Hom Mali Rice and its products such as cosmetic and food products. There were seven rice millers in this cluster (six of which belong to agricultural cooperatives). There are several advantages of clusters in the innovation system such as promoting competition and cooperation. Both *Thung Kula Rong-Hai Hom Mali Rice Cluster* and *Roi-Et Hom Mali Rice Cluster* reveal that they can create the cooperation across vertical integration, and at the same time create competition across horizontal integration i.e. among cooperatives.

At the present, 2017, there are at least 46 agricultural cooperatives located in TKR area engaged in rice cultivation activities, but only three of them, namely Kaset Wisai Agricultural Cooperative, Ltd. (Kaset Wisai District, Roi-et province), Chumphon Buri Agricultural Cooperative, Ltd. (Chumphon Buri District, Surin province), and Agricultural and Land Reform Chumphon Buri Cooperative, Ltd. (Chumphon Buri District, Surin province) are certified GI TKR Hom Mali rice collectors. Among the three, only one (Kaset Wisai Agricultural Cooperative, Ltd.) is also certified GI TKR Hom Mali rice processor For the other two certified GI TKR Hom Mali rice collectors, the Agricultural and Land Reform Chumphon Buri Cooperative, Ltd. does not have its own milling capacity while Chumphon Buri Agricultural Cooperative, Ltd. does have its own



miller but is not certified as GI miller because the collection of paddy from certified GI farmers is transfer entirely to other certified private GI miller located in Roi-et province but outside of TKR area. It is worth mentioning that not all members of certified GI TKR Hom Mali rice cooperatives are certified GI TKR Hom Mali rice farmers, and vice versa. Certified GI TKR Hom Mali rice farmers commonly belong to a group i.e. community enterprises and rice community centers that has supported programs from the Department of Intellectual Property or the Rice Department for rice production standards i.e. GAP. Although the cost of GI certification of TKR Hom Mali rice by the CB is rather expensive, it is almost entirely subsidized either by the Department of Intellectual Property and the Rice Department at the moment. For organic and GAP rice producers located in TKR area, the cost of compliance to GI standard should be not be a burden especially when the certification cost is subsidized. Nevertheless, only a few of rice farmers' organizations successfully attain the GI certification although several rice farmers' organizations have met GAP or organic standards in the TKR area. Furthermore, some certified GI producers including cooperatives that were able to meet GI standards become ineligible after the certification expires. As Porter (1998) suggested that a dynamic competition to win and retain customers is needed for the success of clusters, it is evident that through the competition, not all agricultural cooperatives perform well and remain competitive in certified GI production.

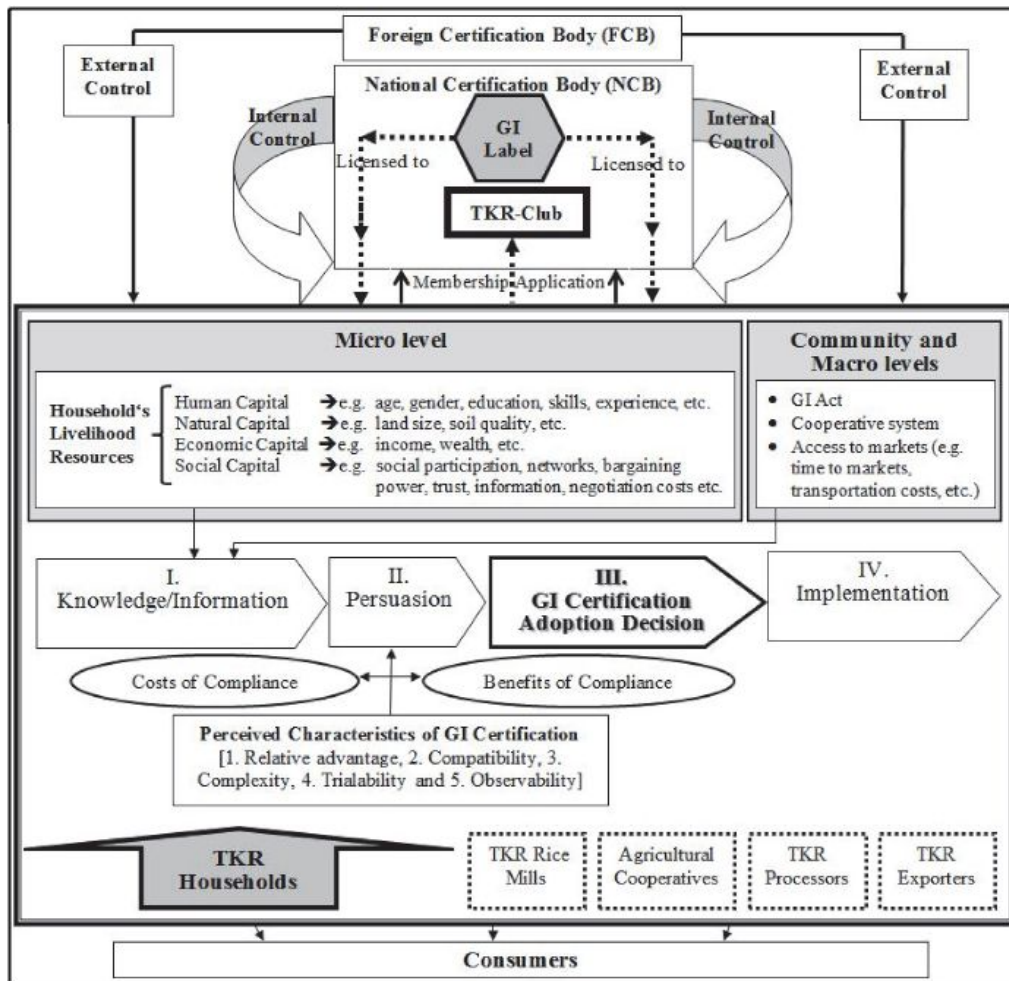


Fig 2. GI certification process of Khao Hom Mali TKR

Source: Ngokkuen and Grote (2012)

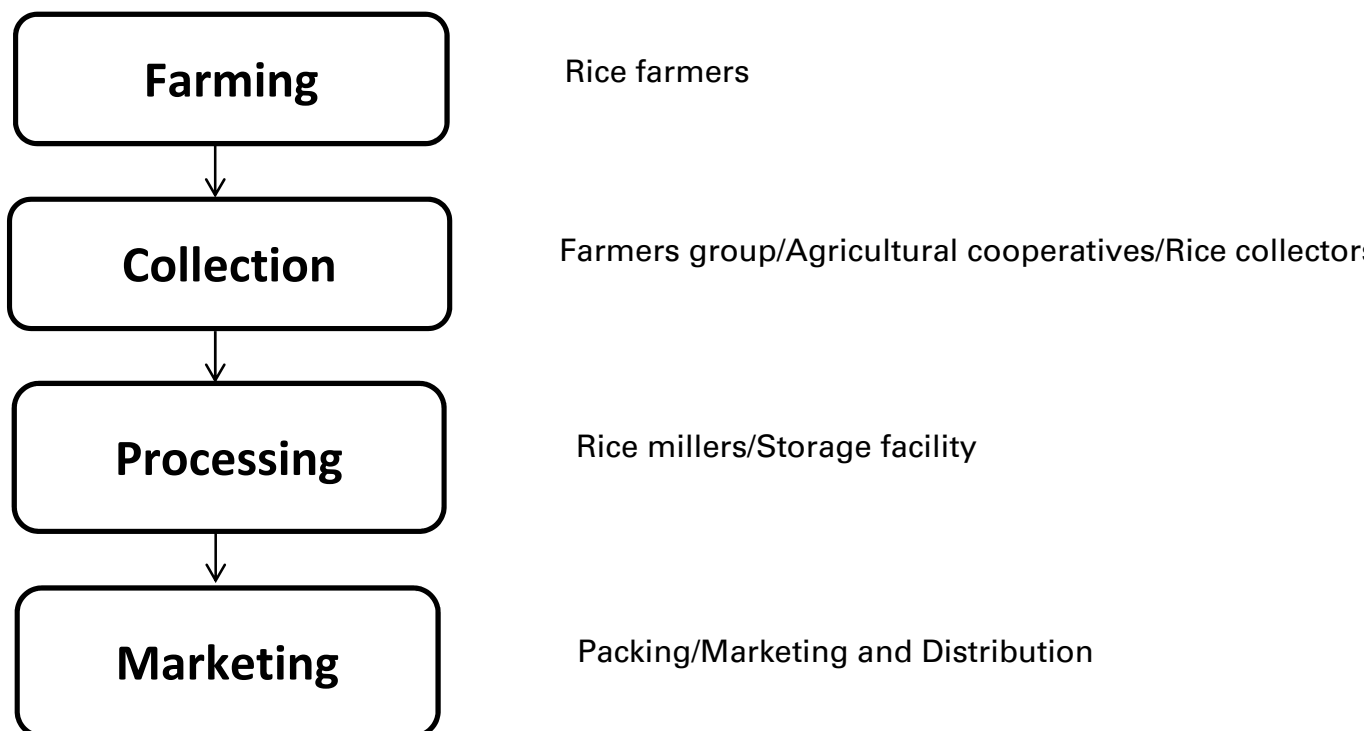


Fig. 3. Supply chain of GI Khao Hom Mali Thung Kula Rong-Hai

### THE ROLE OF AGRICULTURAL COOPERATIVES GI CERTIFICATION AND PRODUCTION

The certification of GI products is one of the innovations in production systems to improve product quality and assurance to consumers. Agricultural cooperatives can play an important role as intermediaries in innovation process. Howell (2006) suggested that innovation intermediary can be a range of organizations involved in supporting the innovation process. Functions of innovation intermediation as he described include foresight and diagnostics; scanning and information processing; knowledge processing and combinations/recombinations; gatekeeping and brokering; accreditation, validation and regulation and standards work; advice and mentoring on protecting intellectual property; and commercialization, for example (Howell 2006 p. 720). In addition, Agogue et al. (2013) reviewed the traditional roles of intermediaries as networking and brokering, and suggested that under high uncertainty and when societal demand for collaborative innovation was strong; the intermediaries are in the position where they can perform activities in a more collaborative setting, and that no single organization can perform by itself.

In this section, the role of agricultural cooperative as intermediaries is discussed. There are several roles that agricultural cooperatives are involved in the GI certification and production of TKR Hom Mali rice. *First*, and maybe one of the most important roles is scanning for information on potential GI rice farmers, and filtering or selecting collaborative partners, namely rice farmers group, millers, regulators, and technical service providers. As certified GI TKR Hom Mali rice agricultural cooperatives are all paddy collectors, the certified agricultural cooperatives connect certified GI farmers and



their products to the market, in this case, to certified GI millers. Potential GI farmers were first identified with the assistance of the Rice Department among members of the cooperatives from existing groups complying with GAP or organic standards as a prerequisite to GI certification. Identifying potential farmers is important to ensure the success of certified paddy procurement. As agricultural cooperatives have information on social, economic and production background of their members, screening and selecting partners are less complicated. All the certified GI rice farmers in TKR area who sold their paddy to agricultural cooperatives are the members of the three certified GI agricultural cooperatives. The agricultural cooperatives not only locate close to the area of paddy fields, but also have extensive relationships with farmers through providing credits, input procurement services, and saving, for example. As a result, despite several choices to sell their paddy, agricultural cooperatives' member farmers have a trust in fair market price of paddy sold to agricultural cooperatives and not only because they are located near the collecting silos.

*Second*, agricultural cooperatives manage knowledge processing by providing technical and information services. The production of GI rice compliance with the CoP is mostly provided by the Rice Department. Nevertheless, staff of agricultural cooperatives often received the production and accreditation knowledge from the regulators, academia, and public and private sectors, and also have a better access to information on market demand and product preferences, for example, than farmers. They also transfer the information and knowledge to farmers i.e. through trainings and meetings.

*Third* is gatekeeping and brokering. This role is important for match-making and collaborative deals of certified GI products. Agricultural cooperatives are often located closer to the farms than certified GI millers. The collections of certified GI paddy by certified GI agricultural cooperatives are sometimes facilitated prior to the production season with the assistance from the Rice Department. Through this arrangement the Rice Department help negotiating with certified GI millers to help farmers obtaining premium price for certified GI paddy. Because certified GI agricultural cooperatives are located closer to farmers, and some certified GI millers are located in a more remote area, paddy collection by agricultural cooperatives is crucial in helping farmers access to the GI market. As mentioned by Ngokkuen and Grote (2012) that distance was one of the constraints in adopting GI certification in 2009, but through this current intuitional arrangement, the production of certified GI products become more promising. Furthermore, one agricultural cooperative is also a certified GI processor. In this case, its role of brokering is finding business deals with the potential clients of certified GI products.

*Forth* is product testing and validating. In procuring paddy from farmers, the agricultural cooperatives have to ensure that they are registered GI farmers. Furthermore, the paddy has to be tested for purity and quality at the time of delivery. It is not the test of GI farm management compliance, but the products have to be at least of minimum standards for Hom Mali rice. The accreditation of product standard is done by external CB. Vandecandelaere *et al.* (2009) stated that the role of producer organizations is important in making it more efficient and less costly in the GI guarantee system than one managed individually, for example, by reducing cost of complying with administrative and technical procedures. In the case of certified GI TKR Hom Mali rice, agricultural cooperatives manage collecting, sorting, storing for GI paddy ready for milling process.

Under the control plan, it is important that the certified GI paddy is traceable back to certified GI farmers. The transfer of paddy to millers by agricultural cooperatives has to ensure that certified GI products are isolated from other paddy, and well-documented of the sources. Economies of scale occur from collecting a large volume of paddy at the same time of delivery and minimizing the cost of administration and transportation. Their role are contributing to the controls and record keeping (traceability system).

*Last* is the commercialization. Although there is only one certified GI producer, this Kaset Wisai Agricultural Cooperative, Ltd. is successful in producing quality product as its product brands received national award for quality packaged Hom Mali rice very several consecutive years. Furthermore, the marketing and sales through agricultural cooperative network nationwide help identifying market opportunities and ensuring steady demand. This is important for certified GI products as the market for GI products is still new, and most Thai consumers are not very much aware of the advantages of certified versus non-certified GI products.

## CONCLUSION

Agricultural cooperatives traditionally play a significant role in the rural agricultural communities as people of the same interests voluntarily join together to meet their common economic, social, and cultural needs. The production of high quality agricultural product in this study, namely certified GI TKR Hom Mali rice in Thailand is relatively new to the market, and still has several market uncertainties as most Thai consumers are not aware of the benefits of certified products. The review of three certified GI agricultural cooperatives in Thung Kula Rong-Hai revealed that they are important intermediaries that increase production productivity by reducing the transaction cost through the economies of scale of product procurement, sorting, storing and delivering to the processor. Furthermore, the cooperation among cooperatives and between cooperatives and other stakeholders in the area that concern for the community make the role of agricultural cooperatives significant as they have close relationships with the members. Nevertheless, not all agricultural cooperatives have the same capacity for being certified producers despite locating in strategic area for GI products. Further investigation will be needed to identify competency of the certified versus non-certified ones.

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