The Evaluation Management of Organic Rice Production by Farmers in Yasothon Province, Thailand

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Sustainable agricultural production has been a major concern globally. In Thailand, self-sufficiency in rice production has been a key goal for the last decades. Nevertheless, high crop yields are often associated with conventional rice cropping system, but this system also may causes soil degradation, loss in biodiversity, environmental pollution, and chemical residues in foods. On the other hand, the organic food pursuing by consumer prompts local farmers to alter the conventional cropping system into a more sustainable way of organic farming. Rice production holds a significant position in the Thai economy. Although it is the world’s largest rice exporter, Thailand’s increase in rice production is the result of expansion in the cultivation area rather than an increase in yield per unit area. The cultivation of rice under organic farming in Thailand is facing certain biophysical, sociological, and economic challenges that hinder the efficiency of organic rice production.

Therefore, the present study was designed to estimate the management of organic rice production by farmers in Yasothon province, Thailand. The specific objectives of this work were to: (1) study the general conditions of farm operations of certified organic rice producers; (2) study about costs and return of organic rice production. The Yasothon province was chosen as this area has been known as the largest organic rice production area in Thailand. To reach the goals of the study, the sampling group was employed of 328 farmer groups sampled from 7 districts of the Yasothon province, located in the northeast of Thailand, namely, KutChum, MahaChanaChai, PaTio, KhoWang, LoengNokTha, SaiMun, and Muang Yasothon. For this purpose, data were collected from a sample of groups of certified organic rice growers in Thailand, entrepreneurs, and stakeholders. The research methodology used was a mixed method that covers the qualitative and quantitative aspects of the data. This included interviews with organic farming and key informants using questionnaires. These organic rice-producing farms have been monitored and accredited by the Organic Agriculture Certification Thailand (ACT) standards. The standards are supervised by the International Federation of Organic Agriculture Movements (IFOAM), EU: TH-BID-121 Thailand Agriculture, and Canada Organic Regime (COR).

The results showed that most organic rice producers were female. The reason is those middle-aged women and graduated primary school early. Residents outside the city often working in agriculture, farmers have a career in farming as their main occupation. And no extra occupation. As for household size, most organic rice producers had family members between 3-4 persons. Hence, most of the family workers from regular workers for farms. Furthermore, these people possibly have more experience in farming between 21-30 years for farmers of Thailand. As a result, the amount of experience in organic rice production for more than 7 years, causing this group of farmers to be certified organic standards for export. Besides, organic rice farmers had farm small size between 0.96-1.6 ha for rice cultivation generates the main income sufficient. The investment in that farm is mostly from self-finance. When considering the production cost and return of organic rice farmers in Yasothon province, it was found that farmers had a total cost average equal to 4,329.32 baht per ha of growing organic rice in 2017-2018. The average selling price was 14.77 baht per kilogram. Farmers had a total revenue of 29,716.94 baht per ha. Organic rice production had an average net profit of 25,387.62 baht per ha, with average net revenue of 26,929 baht per ha. Variable cash costs found that farmers who produce organic rice had net revenue above variable cash cost which was 643.81 baht per ha. In addition, the break-even point of organic rice farmers was an average break-even yield of about 293.12 kg per ha and a break-even price of about 2.15 baht per kg. From the result of this research, it can be concluded that Thai farmers have great potential to increase the yield of organic rice production, which can be reached 72%-77% at maximum. The market can be divided into two groupings; Export market; It was found that most of the organic rice of Yasothon province for export to markets in the United States of America, Europe and Singapore accounted for 70%. Additionally, it was found that the most exported organic rice was jasmine rice which accounted for 99% of total export. Domestic market; It was found that organic rice in the domestic market accounted for 30%, such as supermarkets, green markets, hotels, restaurants, schools, consumers in upcountry and factory. However, there were some production problems like uncertain weather conditions, production costs problems arise from high wages but don't have marketing problems, because organic products have a higher market price than conventional agricultural products. Also, information on the health and environmental impacts of farmers growing organic rice is given; farmers did not have problems with soil conditions, water resources problems (restriction) and illness caused by chemical allergies farmers cultivated rice by using chemicals to turn into organic systems by discontinuing the use of chemicals, causing no problems as mentioned above. Organic agriculture seems to contribute to maintaining an optimal health status and decreases the risk of developing chronic diseases. This may be due to the higher content of bioactive compounds and lower content of unhealthy substances such as cadmium and synthetic fertilizers and pesticides in organic foods of plant origin compared to conventional agricultural products. In terms of health advantages, organic diets have been convincingly demonstrated to expose consumers to fewer pesticides associated with human disease. Organic farming has demonstrated to have a less environmental impact than conventional approaches.

The research is expected to receive benefits such as information on organic rice production and export market system, to present the government and private sectors engaged in promoting the farmers to increase their production capacity, and raises the standard of living of organic rice farmers. Furthermore, this study can provide critical information to farmers, agricultural planners, and the Thai government departments to determine strategies that are useful and practical in raising efficiency performance in each region and to help increase the trend of rice productivity index in some areas of Thailand. Besides, increasing rice yield per ha under the present technology could be achieved by improving the socio-economic characteristics and production management of farmers. In other words, the technical efficiency of rice production can be increased by improvements in farmer conditions and farm characteristics levels.

**Key words:** Organic rice, Costs and return, Yasothon Thailand

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