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Production process and management of Thai farmers in Community Enterprise for Organic farming: Some Changing

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Abstract. In Thailand, reasons to change management systems to organic were farmers faced problem with enternal environment, and also farm family health. These factors increased interest of Thai farmers in organic farming is the sequence of crises in agriculture. However, Thailand is still be an initiative period in organic farming, then this study tries to observe the production process and management of farmer group in community whether there are changing in this area in technology and management. Moreover, the performance of the organic farmer group has also been observed. 48 members of farmers group on organic farming in 8 cities, Chiangmai were interviewed to answered questions relating to the production process and management of organic produce. The findings show the farmers group has planned to grow organic products follow the standard of Organic Management practice and used traditional in production. In addition, the most important innovations of Thai organic farmers were when they decided to certify their products as organic included soil-conservation measures and new crop-management practices. These practices involved relatively low investments. Nevertheless, the performance of the group indicated the satisfaction of earning still have not achieved the goal.

Keywords: Production, Management, Cost, Organic

1. Introduction

The organic farming sector has grown rapidly in recent years in all over the world (Thechatakerng 2009). Especially, the growth in interest in organic agriculture in the developed world was also attributed, in large part, to the problems experienced with existing practices, both on and off the farm, which threaten food security (Gardebroek & Jongeneel, 2004). Recognition of problems caused by synthetic fertilizers and pesticides has led a number of developing countries to reduce, or totally abolish, subsidies on those inputs (Damiani, 2002). In developed countries the health of the farmer and the farmer's family and problems with soil, crop, livestock, and the wider environment were stated. Some of those reasons (such as problems with crop and livestock) were directly related to potential financial returns to farming; others to non-financial costs (such as health and considerations for the environment) (Wynen, 1992; Lockeretz and Madde, 1987). Reasons for decreased input costs and increased output prices, although mentioned, however, were still be limited on the significance of the mentioned problems.

In developing countries, reasons to change management systems would be dependent on the actual situation, as conditions vary between and within countries. Reasons to shift to organic agriculture mentioned by farmers in developed countries were likely to be relevant only to those farmers in developing countries. That was, farmers (generally in Asian countries who adopted the technology from of developed countries, in which they combined the planting of higher yielding crop varieties with excess water and fertilizer use, inadequate nutrient and animal waste containment, loss of biodiversity and excessive reliance on pesticides) and have currently encountered problems. These included farm family health, resistance to pesticides, secondary pests, deterioration of soil and water quality, drop in groundwater level, and increased risk of crop diseases. Despite government policies during these last decades to subsidize agricultural inputs, these remain out of reach to poor farmers (Damiani, 2002).

These factors increased interest of Thai farmers in organic farming was the sequence of crises in agriculture. As these crises some farmers may have concluded that the conventional way of farming was not sustainable inducing them to shift to organic production. Other potential explanations were public opinion signals, expected increase in market demand for organic products, premium prices for organic products, income support during the transition period, investment subsidies, tax benefits or the increased environmental legislation that reduced the difference between conventional and organic farming systems (Panyakul, 2006; Gardebroek & Jongeneel, 2004). The Thai Ministry of Agriculture has set a policy target for the number of organic farmers and many institutes have supported organic farming (Thechatakerng 2009; Panyakul, 2006). However, Thailand is still be an initiative period in organic farming, then the production process and management is still be traditional way, and the technology is still simple and limit. Moreover, the products to produce are basic products for example, rice, vegetable and fruits. As, organic farming has supported from government and many institutes for almost a decade, this study, then tries to focus on the production process and management of farmer group in community whether there are changing in this area in technology and management. In addition, the performance of the organic farmer group has also been observed.

2. Method

2.1. Organic Management practice

We followed the steps of organic management practice which was the standard of organic production (IFOAM, 2009), for example*, Soil management practices included increasing humus content and biological activity as well as meeting mineral deficiency of soils:* manipulation of crop rotations and strip-cropping: deep and shallow rooted plants bring different nutrients to the surface; different crops require different nutrients; growing green manure; under-sowing; application of rock dust, manure, crop and agro-industry residues, household waste, compost; soil tillage, such as use of an implement which aerates the soil. *Pest management practices included* manipulation of crop rotations, to minimize survival of crop-specific pests (in the form of, for example, insect eggs) which could infest the next crop; strip cropping, to moderate spreading of pests over large areas; manipulation of pH-level or moisture level of the soil (in irrigated areas); manipulation of planting dates, to plant at a time most optimal for the crop, or least beneficial for the pest; adjustment of seeding rates, to achieve an optimal rate given the need to crowd out weeds or avoid insects; use of appropriate plant varieties and livestock breeds for local conditions; implementation of stock culling programmes, which emphasize genetic resistance against certain diseases; use of stock buying programmes, which minimize the import of diseases onto the farm; limiting field size, which aids in weed management by livestock; biological control methods, to encourage natural enemies of pests by providing habitat (for example hedges) or by breeding and releasing them in areas where they are required; trapping insects, possibly with the use of lures such as pheromones; biological pesticides (for example, derris dust, pyrethrum, rotenone) of which the active ingredient is short-lasting, and which may be produced locally. *Post-harvest practices include*d in temperate countries, grains can be well conserved when harvested and stocked in conditions which allow air circulation (in jute sacs, ventilated silos, etc.); in tropical countries, humidity and high temperatures pose problems which can be overcome through: harvesting at complete maturity and during dry weather; storing without stripping off the bark; drying of grains under the sun before storing; mixing sand, china-clay, or wood ash to grains; adding little quantities of nut oil to niebe grains (very effective on weevil); addition of smoke or certain plants to repel insects; etc.; in ancient Europe and the Mediterranean basin, grains were stored in buried pits for several years: the anaerobic conditions of these pits prevented insect proliferation and the grains underwent an initial fermentation which protected it from insects and mouldiness, despite the high degree of humidity; traditional procedures allow conservation and enhancement of the nutritional value of cereals and leguminous, such as: fomenting rice (rice is bathed, steamed and dried) destroys insect eggs; transforming wheat in bourghoul (wheat is germinated, boiled, dried and crushed) enriches the cereal with vitamins and essential amino-acids (lysine) and pre-digest starch; fermenting certain leguminous (soy in the Far East and in Africa) gives high nutritional quality products which can be conserved for years; fermented fish sauce (nuoc-nam) allows simple fish conservation and offers an alternative to fish drying, especially that the latter entails inevitable losses in tropical conditions

(Damini, 2002; Wynen, 1999). This paper would continued the above organic management practice explanation as a framework to observe the study.

2.2. Research Method

For this study, organic agricultural farmers group of community enterprise in 8 cities answered questions by face to face relating to the production process and management of organic produce. Farmers were interviewed in late 2009 about participation by organic growers. Questions about the farmers' in general, organic agricultural production management and some problem in production were formed on the farmers questionnaire being used in the Thai farmers group in community enterprise. This study focuses narrowly on the organic products to produce and management of farmers group in Chiangmai province but focused only farmers in strongly organic agricultural produce which we found in 8 cities; Sankampang, Mae-on, Sansai, T. Maefag, Sarapee, Sanpatong, Maerim, Mae-ai, Fang. The group of organic farmers interviewed was selected with guidance from organic agricultural association in community who maintain lists of organic farmers in Chiangmai. Interviews were conducted with 48 farmers located in 8 cities, Chiangmai. Although farmers sampling was not random but, the data generated provide useful information for understanding the current role of organic growers at Chiangmai. The data collected in this study for characteristics including organic production process, management, and problem through qualitative technique.

2.3. Organic Production on Farmers

2.3.1 Characteristics of Organic agricultural farmers

Organic agricultural farmers group was located in Chiangmai province, 8 cities with 48 members. The members were cultivating 268.5 rai of organic agriculture. The organic agricultural farmers were in middle age, in average 45 years old and have not had high education, however, the results indicated some significant in future. Education trend of organic grower would be higher than current date because of unstable career in labor market. This reason turned educated people to be an organic farmer. Farmers group on organic produce in these cities supported by some government agencies, and non-profit organization provided various services to members group, via knowledge transferring, and training. Organic agricultural farmers in these areas concentrated on the production of Longan, rice, vegetable, orange, and other crop. A description of the eight cities organic agricultural producers covered in this study. A summary of the main features of the associations is presented in Table 1.

Table 1 Characteristics of organic agricultural farmers & Area of organic cultivation 2009

Area of coverage	**Number of member**	**Organic product**	**Organic area/rai**	**Total/rai**
Sankampang	2	Red jasmine rice Sticky rice	16 13	29
Mae-on	1	Longan	23	23
Sansai, T. Maefag	5	Red jasmine rice Longan Vegetable	15 18 2.5	35.5
Sarapee		Vegetable	-	-
Sanpatong	29	Longan	42	42
Maerim	3	Longan	5	5
Mae-ai	2	Red jasmine rice Longan Bean Orange	3 4 3 13	23
Fang	6	Red jusmine rice Longan Lemon Put-sa Guayaba Corn Sweet bamboo Orange	10 10 5 5 3 15 5 55	111

		Ginger	3	
Total	48		268.5	268.5

2.3.2 Production process and management

2.3.1.1 Organic production plan

The organic farmers group explained that it was necessary to plan to allocate the land and selected the types of products to produce for example, rice, fruits, or crops. Normally, varieties of products to produce are mixes together. The plan to grow organic plants divined into 3 types to cover their all year earning as follows; daily earning from all kind of basic vegetables in that Geography, seasoning earning, such as rice, bean, and aviation animals, yearly earning, such as fruits, Longan, Mango, and etc.

2.3.1.2 Production process and management

Organic agricultural farmers in each area of eight cities would reunion into each small group with at least 2 -29 members to help each other in their small group manaingt their organic farming. The Organic agricultural group has planned to grow organic products follow the step of Organic Management practice (Wynen, 1999) which consisted of soil, pest, and post management practices. We could detail all the process as follow shading regulation, manual land cleaning, pruning, terrace maintenance, manual disease control, soil testing, organic-fertilizes preparation, maintenance of live barriers, harvesting, on farm processing, and certification, clarified by the one of organic farmers. Nevertheless, we could explain that the production process of Thai organic farmers was still be the same as the innitial stage, some changing could be translated as innovation when changing from convetional farm to be organic farming and certifying as organic.

2.3.1.3 Investments and costs of production

In case of organic agricultural farmers group in Chiangmai, 8 cities, the producers required relatively little change in their technologies of production and few investments, the farmers had been applying technologies similar for organic production to the ones used conventional production. The barriers of the growers group were the access to government extension services and financial institutions, the participated group explained. Moreover, the farmers didn't have financial planning; production cost plan, and profit plan but they could estimate the cost and profit by their experience, for example, farmers in Fang grew organic orange, they estimated the profit was around 166,000 of Thai Baht per time (Tulasombat, 2009). When comparing costs of production between conventional farming and organic farming, the organic agricultural farmers group of 8 cities pointed out that the later was more lower costs. The most important innovations that the farmers of eight-cities to introduce when they decided to certify their products as organic included soil-conservation measures and new crop-management practices,. These practices involved relatively low investments. The most costly of the changes were mainly the investments in labour for the construction of terraces and other soil-conservation measures. Moreover, they could collectively process the organic products to produce a standardized product and meet organic standards. These investments were more significant, but they were not substantially subsidized by the government, the group needed to invest by themselves which were very expensive in each time of verifying. Nevertheless, there were some organization facilitated to reduce the cost of verifying organic standard but the problem was still remained due to the trust of the products from customers, then this problem reduced the price of the products. Yields and Product Prices

The interviews with organic producers in Chiangmai showed that those who had used chemical inputs before shifting to organic production often experienced a substantial decrease in yields during the first few years after the shift. The main reason for this fall in yields was the higher occurrence of pests and diseases that had previously been controlled with chemical inputs. In fact, these farmers witnessed an increase in their yields following the introduction of new organic measures, such as a better shade regulation, the application of organic fertilizers, a better manual control of pests and diseases and the implementation of soil-conservation measures. The information collected through the monitoring systems of the organic agricultural farmers group indicated that organic farmers increased their yields. The costs that the farmers encountered in the production of organic products were higher than their previous costs because they had to apply more labour to implement soil-conservation measures and to harvest the greater volumes due to the increase in yields. The sell of the products on the organic market allowed the farmer group to receive more and to pay

more to their members. However, the farmers were still be in debt due to the increasing of the cost of living in Thailand.

2.3.3 Summary and Future research

For this study, organic agricultural farmers group of community enterprise in 8 cities answered questions by face to face relating to the production process and management of organic produce. Organic agricultural farmers group was located in Chiangmai province, 8 cities with 48 members. The members were cultivating 268.5 rai of organic agriculture. They were in middle age, in average 45 years old and have not had high education, however, the results indicated some significant in future. Education trend of organic grower would be higher than current date because of unstable career in labor market. This reason turned educated people to be an organic farmer. Organic agricultural farmers in these areas concentrated on the production of Longan, rice, vegetable, orange, and other crop. Moreover, the organic farmers group planned to allocate the land and selected the types of products to produce for example, rice, fruits, or crops. Normally, varieties of products to produce are mixes together. The plan to grow organic plants divined into 3 types to cover their all year earning as follows; daily earning from all kind of basic vegetables in that Geography, seasoning earning, such as rice, bean, and aviation animals, yearly earning, such as fruits, Longan, Mango, and etc. Moreover, the group has planned to grow organic products follow the step of Organic Management practice which there was some changing when they shifted from conventional farming to be organic farming and innovation was when they certified as organic products. The costs that the farmers encountered in the production of organic products were higher than their previous costs because they had to apply more labour to implement soil-conservation measures and to harvest the greater volumes due to the increase in yields. The sell of the products on the organic market allowed the farmer group to receive more and to pay more to their members. However, the farmers were still be in debt due to the increasing of the cost of living in Thailand. Future research should obtain more information from other different areas of organic farmers and compare the performance of different area. In addition, the study of production cost should also be focused.

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