



Farming Practices Assessment and Economic Analysis of Organic Rice Farming in Cambodia: Case Study of a Commune in Preah Vihear Province

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Abstract Through the Cambodian government program, adoption of organic rice farming started in 2003. Although some farmers re-converted back to conventional rice farming, there are still some farmers who have continued producing organic rice under contract farming and non contract farming. This study aims to (1) clarify the cultural practices of organic rice farming; (2) compare the productivity and profitability of organic rice under contract farming and non-contract farming, and (3) identify the perception of farmers towards organic rice farming and reasons why they have continued. This study interviewed 85 randomly selected farmers in a commune of Preah Vihear province and further divided them into three types: 32 contract farmers, 32 non-contract farmers, and 21 organic rice contract farmers who partly sold produce outside the contract. Results showed that although transplanting and direct-seeding were prevalent, direct-seeding was the most common practice due to limited labor and rice field location. With regards to productivity and profitability, organic rice contract farmers had more yield and earned more profit than non-contract farmers. Moreover, farmers practicing transplanting had higher yield than those of direct-seeding. However, availability of exchange labor seemed to be a critical factor for farmers to gain profit. The reasons for farmers to continue doing organic rice farming were higher income, better health and contribution to conserve the environment. The reasons for engaging in contract farming were receiving stable and high price and gaining new knowledge. This study hopes to initially contribute to the further development of organic rice farming in Preah Vihear province.

Keywords contract farming, cost and return analysis, cultural practices, organic rice, perception

INTRODUCTION

In Cambodia, agriculture contributed to 28.6% of GDP (2015), while contribution of rice alone accounted for 10%. Recently, the demand for organic products (e.g. organic rice) is significantly increasing due to the increasing number of local people who prefer to consume safe food and live a healthy lifestyle. Moreover, organic rice production for export to European countries is increasing year by year. However, the adoption of organic rice practice only started in 2003. Thus, it is undoubtedly a latecomer on the international organic agriculture scene (COAA, 2011).

Taing (2008) mentioned that social and economic benefits of organic rice farming are not yet sufficiently clarified. During the first few years, Cambodian rice farmers produced organic rice with surprising success, and many organic rice cooperatives were established throughout the main rice production areas in Cambodia. However, many organic rice farmers diminished in scale, and

many organic rice farmers re-converted to conventional farming even though Taing (2008) and Sa (2011) reported that organic farming could increase farmers' rice yield and profit.

According to Preah Vihear Provincial Department of Agriculture (2017), there are agricultural cooperatives that still produce organic rice in a natural way without external inputs such fertilizers and pesticides in Preah Vihear province. In 2017, this province produced almost 30,000 tons of organic rice from 5,162 smallholder farmers who engaged in contracts with three different private companies (contractors).

OBJECTIVE

This study aims to (1) clarify the cultural practices of organic rice farming; (2) compare the productivity and profitability of organic rice under contract farming and non-contract farming, and (3) identify the perception of farmers towards organic rice farming and reasons why they have continued.

MATERIALS AND METHODS

This study was conducted in a commune of Preah Vihear Province, which is the second largest agricultural area in Cambodia. The main commodities are rice, rubber, and cashew nuts. It is located in the Northern area of the country and shares international border with Thailand and Laos. This province is also considered as the "Kingdom of Organic Rice." Most people are farmers who grow rice during wet season only because of no irrigation or canals. On another hand, the selected commune had a population of 8,296 person (2016) and covered a total area of 36,535 ha of mostly hilly forest, located 396 km. from Phnom Penh City. This commune was selected because many farmers are cultivating organic rice (Provincial Department of Agriculture, 2017).

Primary data were collected through questionnaire survey of randomly selected organic rice farmers and key-informant interviews (e.g. agriculture officers and other stakeholders) in March and August 2017. A total of 85 organic rice farmers were interviewed and further divided them into three types: 32 contract farmers, 32 non-contract farmers, and 21 organic rice contract farmers who partly sold their produce outside the contract (hereafter, mixed farmers).

Descriptive analysis and cost and return analysis were utilized in this study.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Selected Organic Farmers

New farmers who engage in contract farming are usually required to pay 50% of certification fee, while the other 50% is paid by the private company (contractor). However, during the introduction of contract farming in 2017, an NGO extended support to all contract farmers through payment of the farmer's share to the certification fee. Moreover, contract farmers were provided organic rice seeds and training sessions on organic rice standards, certification application process, organic cultivation, and internal control system.

Table 1 Socio-economic characteristics of selected organic farmers (n=85)

Items	Contract farmer	Non-contract farmer	Mixed farmer ¹
Number of household (HH)	32.0	32.0	21.0
Average age (years old)	37.8	39.9	34.8
Average family size (person)	5.3	5.7	5.5
Average education (years)	4.9	4.7	4.4
Average farming experiences (years)	19.8	22.6	18.7

Source: Field survey, 2017

Note: Mixed farmers refer to those farmers who engaged in contract farming but sold part of their organic rice produce outside the contract.

Table 1 shows the general profile of the three groups of farmers. The average household was about five members in each group. Non-contract farmers were the oldest and had the longest farming experience among the groups. On another hand, contract farmers had the highest educational attainment.

Cultural Practices

The field survey revealed that selected farmers commonly cultivated white rice variety (known as Neang Om and Neang Ouk in Khmer language). This variety has long maturity (specifically, 8 months) and is suitable for wet season and land condition in the study area. Farmers commonly start land preparation from May and do harvesting between late-November and early December.

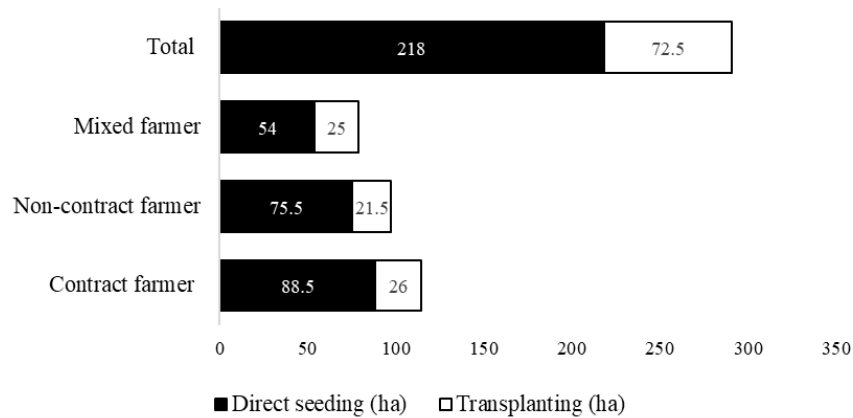


Fig. 1 Total land size by farmer type and crop establishment
 Source: Field survey, 2017

As shown in Fig. 1, all groups practiced both types of crop establishment (e.g. direct-seeding and transplanting). Particularly, all farmer respondents preferred direct-seeding due to shortage of labor and the long distance of rice paddy field from home.

Table 2 Cultivation practices by farmer group and crop establishment

		Transplanting		
Cultivation stage		Contract farmer	Non-contract farmer	Mixed farmer
Pre-cultivation	Farm location	Near home	Near home	Near home
	Seed (kg/ha)	73.95	78.62	81.37
Cultivation	Land preparation	3 times	2 times	Less than 3 times
	Seedling age	18- 21 days	More than 20 days	3 weeks
	Space between line and row	20-25 cm	<20cm	25-30cm
	Transplant (seedling per hill)	1 seedling	2 or 3 seedlings	1 seedling
	Seedling depth into soil	2-3 cm deep	>3cm	2-3cm
	Weed control	Hoes and hand	Hoes and hand	Hoes and hand
	Pest control	Spiders and frogs	Spiders and frogs	Spiders and frogs
Irrigation	Rainfed	Rainfed	Rainfed	
		Direct-seeding		
Pre-cultivation	Farm location	Far from home	Far from home	Far from home
	Seed (kg/ha)	148.28	150.03	125.21
Cultivation	Land preparation	3 times	2 times	Less than 3 times
	Weed control	Hoes and hand	Hoes and hand	Hoes and hand
	Pest control	Spiders and frogs	Spiders and frogs	Spiders and frogs
	Irrigation	Rainfed	Rainfed	Rainfed

Source: Field survey, 2017