



The Study on Conventional Farming Practice - A Case Study of Farmers' Practice in Samroung Village, Cambodia

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Abstract Agrochemicals application has been rapidly popularized in Cambodia due to agricultural development technologies. Although agrochemicals utilization has significantly increased crop production, it has negative impact on human health, sustainability of land use and ecosystem. Therefore, this study has been focused on conventional farming practice in Samroung village of Kampong Cham province, Cambodia. The main objectives of this study are 1) to understand current situation of farming practices in the village and 2) to identify the condition of agrochemicals applied at farmlands. To access the objectives of this study, various participatory researches, both quantitative and qualitative have been conducted. Semi-structured interviews, in-depth interviews, focus-group discussion were conducted, and secondary data were used in this study. Data was summarized and analyzed to observe the significant difference and high confident correlation of these variables by using One-way ANOVA and Regression Analysis. The result of the study showed that rice and vegetable production is main sources of farmers in Samroung village. In addition, chemical fertilizer and pesticide are applied for increasing crop production. The amounts of chemical fertilizer and pesticides applied did not correlate with the level education of famers, also with the size of farmland as well ($P > 0.05$). In addition, the amounts of pesticide applied did not correlate with the total annual household income. However, the amounts of chemical fertilizer applied showed slight correlation with the total annual household income from agriculture ($P < 0.05$). Also, increasing expenses of agrochemicals application, especially chemical fertilizer application, affects to the farmer's annual income. Moreover, it affects to their life that depends on low income from their agricultural products. Furthermore, the survey indicated that 92% of farmer in the village want to change their practice to sustainable practice in the future. Therefore, agricultural education such as providing technical training, workshop is necessarily required for promoting sustainable use of agrochemicals as well as alternative ways based on organic farming practices and farming practice with low chemical input.

Keywords conventional farming practice, agricultural education, agrochemical application, Cambodia

INTRODUCTION

Cambodia is located in the Southeast Asia region, and its topography has enormous potential for agriculture development. Agriculture is vitally important for economic growth and eradicating poverty of the people. According to the statistics of Ministry of Agriculture, Forestry and Fisheries of Cambodia in 2009, agriculture productions share 34.4% of total GDP, in which rice and vegetable represented 54% and 8% of total annual crop production. Increasing crop productivity is

a main factor that increases farmer's income as well as national economy. In view of this, farmers apply agricultural chemicals, such as chemical fertilizers, herbicide or pesticide, to maintain high levels of crop yields. In 2001 chemical fertilizer and pesticide were imported into Cambodia, which represented 45,335 tons and 200 tons respectively (MoE, 2004). The tendency of agrochemicals application has been rapidly popularized in the country. In 2010, 245,854 tons of chemical fertilizer was imported into the country (MoE, 2010).

Kampong Cham province is a main agricultural development zone in Cambodia. The major activity of the people in this area is agriculture, mainly cultivating rice and vegetable. Agricultural history of this area tends to change from traditional farming to conventional farming, and the amounts of agricultural chemicals applied to farmlands are increasing every year. According to Ngo and Siri wattananon (2009) more than 60% of farmers in Prey Chhor district, Kampong Cham province, have applied agricultural chemicals without understanding their impact. Although agrochemicals utilization has significantly increased crop production, it has negative impact on human health, sustainability of land use and ecosystem.

This study has been focused on conventional farming practice in Samroung village of Kampong Cham province. The main objectives of this study are 1) to understand current situation of farming practices in the village and 2) to identify the condition of agrochemicals applied at farmlands.

METHODOLOGY

Study site

The study was focused in Samroung village consisting of 196 households in Samroung commune, Prey Chhor district, Kampong Cham province about 17 km from Prey Chhor Centre. Samroung commune consists of 11 villages with 8,111 people in 1,714 households which account for 93 % of total population, all of whom depends on agricultural sector, mainly on rice cultivation and cash crops for living (CDB, 2010). Most farmers in Samroung village cultivate rice and vegetable. The agriculture situation in the village converted from traditional practice to conventional farming system.

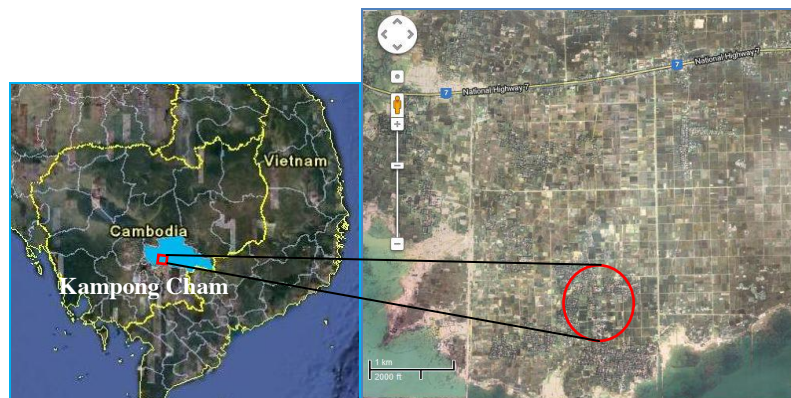


Fig. 1 Location of Samroung village

Data collection and analysis

Secondary data collection: Existing relevant documents were collected from research institutions, journals and reports of experts who had carried out studies in the project area to better understand the issues involved.

Primary data collection: Two steps were used in primary data collection. Firstly, focus group discussion was carried out among 7 key persons from the village. A semi-structured questionnaire (a) was used for key informant interviews; a structured-questionnaire (b) was designed for a

household survey on 51 farmers who were selected randomly for interview. This method focused mainly on socio-economic and agricultural situations of the households, cultivation techniques and farmers' perception on the tendency of converting from conventional farming to sustainable farming practices.

Data analysis: The data was summarized; and descriptive statistics, including percentages, mean and standard deviations were used to analyze the data. Also, inferential statistic, including One-way ANOVA and Regression Analysis were used to analyze the significant difference and high confident correlation of these variables.

RESULTS AND DISCUSSION

The current situation of conventional farming practices in Samroung village

According to the result of focus group discussion, it was included that rice is a main crop in Samroung commune and is cultivated 2 to 3 times a year. Besides rice cultivation, cash crops are cultivated rotationally for the whole year depending on the water sources. The main cash crops in the village are cultivated for additional income (Table 1). These vegetables are planted in 4 rotations at upland fields all year round, and a peak season of harvest is from August to October.

The results of the household survey showed that 63% of the households cultivate rice, 34% cultivates rice and vegetable, and 3% does not conduct farming. The average total paddy fields and vegetable fields are 1.5 ha (SD = 1.05) and 0.04 ha (SD = 0.08), respectively.

Table 1 Crop calendar in Samroung village

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1) Rice											
2) Onion												
3) Lettuce												
4) Chinese Kale												
5) Cucumber												
6) Chinese cabbage												
7) Bitter melon												
8) Long bean												
9) Tomato												
10) Eggplant												
11) Chili												

Source: ERECON, 2012

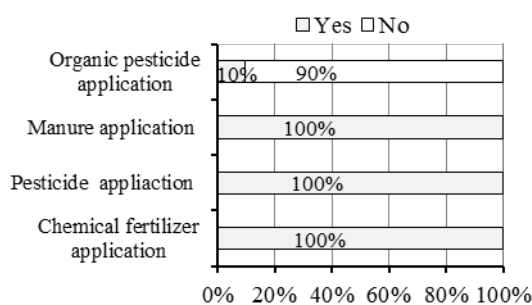


Fig. 2 Percentage of farmer's applying agrochemicals and organic materials

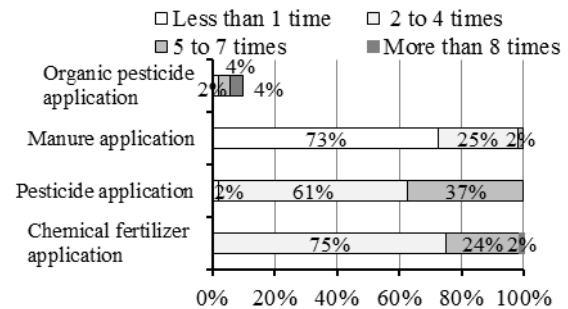


Fig. 3 Time of applying agrochemicals and organic materials