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Factors Influence the Efficiency of SLM Practices in Thailand and Vietnam

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Abstract: Our study purpose is to analyze Factors influence the efficiency of SLM practices **in Thailand and Vietnam**. We Also find that ***Types of farm structures that lead to the implementation of SLM practices.*** The physical characteristic of farmland in NE has unique and different from all regions of the country. The results of the study showed that farmers who do farming for living lead to the implementation of SLM practices in the region.

Keywords: Efficiency, SLM Practices, Farming Structures, Farmers.

INTRODUCTION

Our result confirms Farmers experience showed benefit in many SLM practices. In some practices, we see farming experience showing as constraints, this may lead to once farmers adopt the practices, but they are given up by many constraints in the farm such as drought problem, labors shortage, and time constraints, etc. Aged farmers see more constraints than young farmers in adopting SLM practices. The more farmers are old, the more they are lack of power to learn. However, the resulted showed that old farmers are interesting in adopting organic farming; this can lead to a health concern. Also, Farmers who have land tenure security see more benefit of SLM adoption while land tenure insecurity is one of the major constraints seeing by most farmers. So, we choose the topic: "Factors influence the efficiency of SLM practices **in Thailand and Vietnam".**

PREVIOUS STUDIES WE ANALYZE

Table 1: Summary of previous studies

Authors	Year	Content, results
Kabir& Rainis	2015	The adoption of integrated pest management studied by Kabir& Rainis, depends on the farmer field school training, land ownership status, perception toward practices, use of improved varieties and extension contact. In other words, farmers who had training facilities and frequent extension contact were more interested in adopting the practices. By contrast, the users of biological control and soil solarization were comparatively fewer, and vegetable cultivation area, age, household size, land ownership status and perception toward practices significantly influenced the adoption variation
World Bank	2007	The profitability of SLM technologies is an essential factor in influencing technology adoption. However, land tenure security is the major concern of farmers for SLM investments. The impacts of household endowments on SLM technology adoption and cost of input, both are contributing to factor adoption or not SLM practices by farmers
Giger et al	2015	The key element explaining farmers' decision to adopt or not adopt SLM technologies and practices according to Giger et al. (2015) is the perceived of farmers about the profitability of practices.
Stuart et al.	2018	stated the major's key challenges faced by rice farmers are labor shortage, increased input cost, reduced availability of water, and a degrading environment

(source: author synthesis)

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METHODOLOGY

Authors mainly use statistical analysis combined with qualitative analysis (synthesis and inductive methods).

Qualitative data analysis will use narratives to describe the importance of farming in farmers' livelihood and the presence and efficiency of AIS and SLM practices on farmers' engagement to implement SLM practices in Northeast region of Thailand.

MAIN FINDINGS

Research in a Case of Thailand

This study identified:

Types of farm structures that lead to the implementation of SLM practices

The physical characteristic of farmland in NE has unique and different from all regions of the country. The results of the study showed that farmers who do farming for living lead to the implementation of SLM practices in the region. Since many factors change the livelihood of farmers and influence the way they do farming. According to the results, if farmers are interested in farming and can solve the constraints, they are facing in adopting SLM practices they will adopt SLM practices.

Hypothesis: Farm as a "life project."

H (A). The possibility for farmers to earn their main living from farming is the main key of adopting SLM practices.

For instants in the study areas, Famers who get the income from vegetable adopt compost, bio-fertilizer, and bio-pesticide in order to get non-chemical products' certificate and sell at a reasonable price. From field observation, most of the farmers who earn their main living from the off-farm job, they invest in farm activity only in farm season and do not care about soil quality improvement. This results in line with the study of Nguyen et al. (2016) that a household with permanent non-farm income does not invest much in crop production because the household is more food secure and is more interested in investing in other businesses. Some members of the household are permanent workers, teachers, or staff of local institutions. They receive a monthly wage. However, as a result of the economic progress of the country, off-farm income could influence the level of input use since farmer can increase the purchasing power of the household for farm inputs such as chemical fertilizers. In this sense of non-farm activities compete with farming for labor crop production may be more capital and less labor intensive (Nguyen et al., 2016)

H (B). Secure access to land, the result showed that land ownership has positive significant on the adoption of SLM practices. Likewise, the adoption of innovation and practices depended on land ownership status; increased land tenure security is theoretically contributed to improved land productivity and soil conservation. (Kabir& Rainis., 2015, 2016; Srisopaporn et al., 2015; Boulay et al., 2012)

H (C). The farmer still aims to develop and be farming in the next 10 years or have a clear successor in the family.

Future farming plan in the next ten years has a positive influence on SLM adoption as shown in the result section. Su et al., 2018 stressed that farmland abandonment in Japan results from the arable land ratio of self-sufficient farm households and non-successor farm households while the arable land area per farm household and the laborers per farm household were negatively correlated with farmland abandonment.

Likewise, the results of our study showed that successful in farming, have a future plan for farming are more interest to invest in farming and have more possibility of adoption SLM.

The results showed that farm size is not significant as an influencing factor on adopting of SLM practices.

However, for the efficiency of SLM practices the results showed that many farmers are not convinced about the efficiency of several SLMs.

The analysis showed that many factors including education, experience, land tenure security, vegetable producing, water availability, livestock, and farming plan, all are positively significant increased SLM adoption. However, Poo Jad Kan is negatively influenced on adoption SLM practices. Analysis of each of SLM practice showed that each explanatory factors influence more or less according to each practice. The 11 SLM practices, had both similar and/or different constraints, and there was some specific detail in each constraint that farmers could not apply appropriately in practice. For instance, for some farms, farmers

who have no livestock and have to brought-in livestock manure for using in their farm and to make compost/or bio-fertilizer. Or, green manure seed is expensive for farmers to invest in their big size field with unsure climate condition and the availability of water used for farming. Besides land tenure security and the farming plan is the essential motivator of SLMs investment.

Research Case in Vietnam

On November 13, 2019, the Ministry of Natural Resources and Environment approved and announced the results of the country's land area statistics in 2018 (as of December 31, 2018): The area of agricultural land group is 27,289,454 ha; The area of non-agricultural land group is 3,773,750 hectares; The area of unused land group is 2,060,393 hectares.

Looking at these data, it shows that from 2011 to 2018, the area of unused land group put into use was more than 1 million hectares (from 3,073,958 hectares to 2,060,393 hectares). This shows that the exploitation and use of land resources for different purposes has been and is being promoted.

In addition, the area of agricultural land increased from 26,280,548 hectares to 27,289,454 hectares and the area of agricultural land increased from 3,740,604 hectares to 3,773,750 hectares.

According to research on changes in the area of land types in the period 1994 - 2016 by the Central Institute for Economic Research and Management, for agricultural land there has been a significant change in the direction of increasing both agricultural land and agricultural production land. agriculture, forestry land and water surface for aquaculture thanks to promoting reclamation and irrigation coupled with land reclamation.

From 2001 to present alone, although the area of agricultural land has increased sharply (from 8.88 million hectares to 11.53 million hectares), the area of rice land has decreased from over 4.34 million hectares. down to 4.14 million hectares), accompanied by an increase in land for other annual crops and perennial crops.

In particular, the reduction in rice land area is partly due to urbanization and industrialization, which has converted a part of agricultural land (including rice land) to non-agricultural land, and the rest is due to the effectiveness of agricultural land. Rice cultivation is low, does not bring attractive income such as shrimp farming, freshwater aquaculture, growing fruit trees, vegetables, flowers, ornamental plants, livestock...

Currently, agricultural production in localities is organized in many different forms such as: households, cooperatives, farms, businesses... converting the structure of agricultural land towards production. Large scale will promote the development of farms, cooperatives and agricultural enterprises.

At the same time, the accumulation and concentration of land is one of the factors that create conditions for the formation of large commodity agriculture on the basis of promoting advantages of scale, by overcoming the situation of land fragmentation. , expand cultivation area, avoid wasting land; Able to apply science and technology, especially mechanization... Thereby, improving productivity, quality and the ability to accumulate and concentrate land, contributing to reducing social costs and making it more convenient. in investing in developing technical infrastructure in rural areas.

(source: http://stnmt.kontum.gov.vn/vi/news/tai-nguyen-dat/chuyen-dich-dat-nong-nghiep-dap-ung-yeu-cau-phat-trien-ben-vung-2483.html).

CONCLUSION

Conclusion

In Vietnam case, there has been a significant change in the direction of increasing both agricultural land and agricultural production land. agriculture, forestry land and water surface for aquaculture thanks to promoting reclamation and irrigation coupled with land reclamation.

In Thailand, Future farming plan in the next ten years has a positive influence on SLM adoption as shown in the result section. Likewise, the results of our study showed that successful in farming, have a future plan for farming are more interest to invest in farming and have more possibility of adoption SLM.

However, for the efficiency of SLM practices the results showed that many farmers are not convinced about the efficiency of several SLMs.

Recommendations

Plan of farmers are the key factors of adoption SLM practices. The adoption of integrated pest management studied by Kabir& Rainis (2015), depends on the farmer field school training, land ownership

status, perception toward practices, use of improved varieties and extension contact. In other words, farmers who had training facilities and frequent extension contact were more interested in adopting the practices. By contrast, the users of biological control and soil solarization were comparatively fewer, and vegetable cultivation area, age, household size, land ownership status and perception toward practices significantly influenced the adoption variation.

Figure 1: Farmer training in Thailand case

Figure 2: Farming in Thai agriculture
(source: Phastraporn Salaisook Thesis, 2019)

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