

Noppadon Singto 2011: Assessing the Sustainability of Rice Cropping Systems in Bang Luang Sub-District, Bang Len District, Nakhon Pathom Province. Master of Science (Sustainable Land Use and Natural Resource Management), Major Field: Sustainable Land Use and Natural Resource Management, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Suwanna Praneetvatakul, Ph.D. 99 pages.

Flood is an important problem affecting on agriculture in the area. It also affects on agricultural decisions and sustainability of the agricultural systems. This research aims to analyze economic and social conditions of sampled farmers, to assess the sustainability of rice cropping systems and analyzes the affecting factors on the sustainability of rice cropping systems in Bang Luang sub-district, Bang Len district, Nakhon Pathom province by the interviews of 92 rice-based farmers. The sustainable efficiency was analyzed as a sustainable indicator of rice cropping systems to see the weak points for bringing it to the sustainable development. It was assessed from land , labor , social welfare, soil management , water management and chemical pesticide expenditures utilized in the calculations of sustainable efficiency. Finally, Tobit regression model was used to analyze the affecting factors on the sustainability of the systems.

The results in cropping year 2009/2010 showed that in every year and almost every year flooded areas, the most selected system was 2 sequential cropping without fallow, although it was least sustainable whereas the most sustainable system was 2 sequential cropping with fallow. Moreover for infrequently flooded areas, the most selected system was 3 sequential cropping , whereas the most sustainable system was 3 sequential cropping with ratoon in the last crop. As affecting factors on the sustainability, found that the bigger land can bring more sustainability whereas fertilizer and water management expenditures can bring less sustainability to rice cropping systems in Bang luang.

The suggestions to the farmers are they should retain their land size. They also should select 2 sequential croppings with fallow if their fields are flooded every year and almost every year. For infrequently flooded areas, they should select 3 sequential cropping with ratoon in the last crop. With suggestions to revelant organizations, they should consider appropriate rice cropping systems for agricultural extension in Bang Luang.

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Student's Signature

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Thesis Advisor's Signature