CORPUS PUBLISHERS

Archives of Agriculture Research and Technology (AART)

ISSN: 2832-8639

Volume 6 Issue 1, 2025

Article Information

Received date : November 15, 2024

Published date: March 05, 2025

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DOI: 10.54026/AART/1076

Keywords

Ability; Rubber plantations; Agriculture; Extra income

Research Article

Ability to Make Extra Income Agriculture of Agriculturist in Rubber Plantations in Somdet District, Karasin Province. Thailand

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Abstract

The present agriculturists in Thailand are still facing the problem of gaining less profit from growing rubber trees. The main reason is that it takes a very long time for the rubber trees to grow until they can produce rubber latex. For this reason, some agriculturists have less income while waiting for the rubber trees' growth. So, some agriculturists decide to grow other useful plants to increase revenue, such as cassava, corn, etc. From the study of agricultural potentiality, in Somdet district, Kalasin province, using 20 percent of the population randomly, agriculturists can increase additional revenue by growing some additional plants in the rubber tree plantation fields when the rubber trees are 1-4 years old. The most important additional plants in Kalasin Province cover an area of the 280,530 rai, representing 12.29% of the total cultivated area. The average income of 11,537.5 baht per year is for agriculturists who don't have an additional occupation. Moreover, agriculturists have additional revenue, at the very beginning of the planting season when the rubber trees are 1-4 years old, from raising cattle, with an average income of 10,5990.16 baht per year, higher than those who have no extra occupation by 24.9 percent.

Introduction

The rubber tree *(Hevea brasiliensis)* is one of the important economic plants of Thailand. It has a total planting area of about 12 million rai, most of which is in the south. But at present, the planting area has been expanded in all regions of the country. With a population of approximately 6 million people engaged in rubber plantations [1], Thailand can export rubber in both raw materials and rubber products worth hundreds of billions of baht per year. It faces the problem of selling tires for less profit [2,3]. Para rubber takes many years of planting time for rubber seedlings to grow until a rubber tree can provide latex. Most of the land that farmers invested in rubber plantations would not be able to be used for other farming, causing farmers to face the problem of lack of income while waiting for the growth of rubber trees. At present, in the northeastern region, para rubber is planted in every province. But in the northeastern area, which is a region with more rubber plantations, there is a limitation in terms of water and different climates from other regions. Supplementary crops or supplementary activities in the rubber plantations may be different from those in other regions. Therefore, the research team is interested in studying the potential of farmers in farming to increase income in the rubber plantations, including the cost-effectiveness of the resulting return, by selecting provinces where the research team is domiciled and which have a large number of rubber plantations, namely Somdet Kalasin District. In the future, it is likely to increase even more to provide information to disseminate knowledge to youth, farmers, and those who are interested [4,5].

Methods of Conducting Research

Population and sample

The population used in this study was a group of rubber farmers in three sub-districts with the most rubber plantations in Somdet District, Kalasin Province, Thailand: Mu Mon Sub-district, Lam Huai Lua Sub-district, and Pha Sawoey Sub-district. The sample group was obtained by simple random sampling using a criterion of 20% of the population from the total population of each sub-district in the three sub-districts, namely Mu Mon (18 households), Lam Huai Lua (23 households), and Pha Sawoey (21 households).

Data Collection Tools

a) A questionnaire for generating additional income from rubber plantations

b) interview form

c) Agricultural survey to supplement income in rubber plantations

Data Procedure

a) Specify the scope of the study area by considering the area. In the northeastern region, the closest province where rubber plantations are planted the most is Somdet District, Kalasin Province.

b) Study the document (Documentary Studies) to gather the botanical information of rubber and related factors affecting rubber planting.

c) Research the population of rubber plantations in Somdet District, Kalasin Province, from the Somdet District Agriculture Office.

d) Select a sample from the sub- districts where the most rubber is planted, in 3 sub-districts in Somdet District, Kalasin Province. Then, a simple random sampling was performed using a 20 percent criterion for each sub-district.

e) Conduct field visits to collect data using questionnaires.

f) Explore the types of plants and animals produced by farmers as additional income from the rubber plantation, and compare the additional income from new rubber plantations and established rubber plantations.

g) Take the questionnaire obtained to verify the integrity of the data for further action.

Data Analysis Process

a) Check every questionnaire and select. Only the complete copy must be obtained. Complete information about all income and expenses.

b) Separate data from the questionnaire for each sub-district and use it to calculate the return on extra income by creating a simple mathematical model to calculate the return on extra income.

Return = Income - Expenses - Loss of Opportunity

Income = Productivity (Kg. /Rai) x (Ph.T. Rai) x (Price Baht/Kg.)

Expenses = (Fertilizer (Kg. /Rai) x Colonel (Rai) x Price (Baht/Kg.) + Transportation cost (Baht/Kg.) + Labor cost

Opportunity loss = Product lost from slow growth (Kg/Rai) x BPT. (rai) x price (baht/kg) + spending time doing other things (baht).

c) Compare the extra income generated from the garden new planted rubber with family expenditures of the sample group

Result

The Study on the Trend of Increasing Para Rubber Plantation Area in Somdet District, Kalasin Province. It was found that there was a continuous increase in the planting area in 2004, approximately 1,600 rai, which increased to 4,500 rai in 2007, and continues to increase today. From the study of conditions of supplementary farming in the rubber plantation plots, the most important supplementary crop in Kalasin province is cassava. On average, the planting area is about 280,530 rai, accounting for 12.29% of the total cultivated area. The total production is about 470,000 tons, and from the study of animal husbandry data of farmers, there are various types of animals raised such as beef cattle, buffaloes, pigs, goats, layer chickens, broilers, and ducks, which from 2003 to 2008 tends to increase each year. Farmers raised beef cattle at 240,995 heads, representing 46.75%, followed by ducks at 142,898 heads, or 27.72%. During the first 1-4 years of the rubber tree's age, it was found that farmers with additional income would have additional income from planting rubber plants and raising animals. As for the farmers who have rubber plantation plots, during the rubber tree's age of 4 years or more, those who have additional income, will have additional income from raising animals alone (Figure 1). By comparing the average income of farmers with supplementary income from the rubber plantation plots with those without additional income, it was found that farmers who had the potential to do supplementary agriculture in the rubber plantation plots had more income than those who did not do supplementary agriculture, as shown in Table 1.

Figure 1: Raising animals in a rubber plantation.

Table 1: compares the median income between farmers with supplementary income and farmers without supplementary income.

	The age of the rubber tree is 1-4 years		The age of the rubber tree is 4 years or more	
	farmers with additional income	farmers without additional income	farmers with additional income	farmers without additional income
Mean income	11,537.5 Bath	- 29,758.7 Bath	425,077.0 Bath	319,086.9 Bath
income difference	18,221.2 Bath		105,990.1 Bath	

Discussion

From the study of the tendency of rubber planting in Somdet District, Kalasin Province, it was found that since 2004, the planting area has been about 1,800 rai, and the rate is increasing rapidly every year continuously. In 2007, the planting area reached 4,500 rai. It was added that the most popular plant among rubber plantation plots of farmers in Somdet District, Kalasin Province, is cassava, which generates additional income from the rubber planting. Cassava is popularly cultivated in the rubber plantation plots aged 1-4 years. From animal husbandry studies, it was found that farmers raised different types of animals, such as beef cattle, dairy cows, buffaloes, pigs, goats, layer chickens, broilers, and ducks. In 2003-2008, there was an uncertain trend of increasing each year depending on many factors. The animals that are raised the most are beef cattle (46.75%), followed by ducks and chickens (27.72%). During the first 1-4 years of the rubber tree's age, it was found that farmers with additional income would have supplementary income from planting rubber plants and raising animals. Farmers will have an average supplementary income of 11,537.5 baht per year. Farmers who have no additional income from the rubber plantation, during the first 1-4 years of rubber tree age, had an average expenditure of 29,758.7 baht/year. The difference in income between both groups of farmers averaged 18,221.2 baht/year. Most of the farmers who have rubber plantation plots during the rubber tree age of 4 years or more will earn additional income from animal husbandry, with an average income of 425,077 baht per year, which is 24.9% higher than farmers who do not have additional income, about 105,990.16 baht per year. Generating additional income from the rubber plantation is popularly cultivated in the rubber plantation plots during the 1-4-year-old rubber trees that have not yet been able to open for rubber tapping. Thus, they demonstrated the potential for supplementary farming in the rubber plantations of the farmers to generate additional income. That is, rubber plantations in the Northeast, although the main limiting factor is water. Dry weather farmers were able to find ways to do additional farming in the rubber plantations. From the study, it was found that the most popular crop that farmers planted in the rubber plantation plots was cassava, although the Rubber Replanting Aid Fund did not advise farmers to plant it because it would slow down the growth of the rubber tree. But limiting factors in terms of water, weather, incentives from purchase sources, ease of harvesting, and distribution caused most farmers to grow cassava as a stalk crop in the rubber planting plots more than other crops.

Suggestion

a) There should be more research studies on the effects of other plants that are used to grow additional income on the growth of rubber trees.

b) There should be promotion, marketing, and other additional occupations for farmers during the waiting period for rubber latex tapping.

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