



An Analysis on the Policy of Promoting Rubber Trees Cultivation for Replacing Garlic and Longan Growing: A Case Study of Chiang Mai, Thailand

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Abstract The acceptance of farmers' participation in promoting rubber trees cultivation for replacing garlic and longan growing has been studied. Interview schedule, in-depth interview and focus group discussion techniques were used to obtain required data from eighty participants, sixty-two non-participants of rubber cultivating project and three representatives from the Office of Rubber Replanting Aid Fund. The collected data were analyzed by descriptive statistics. It was found that more than one-third (38%) of farmers decided to participate in the project and the rest (71.98%) did not want to participate because the cultivation area was under drought. In 2003, there were 1,127 farmers in Chiang Mai participating in the project with a total cultivation area of 6,770 acres. Thirty participants (37.50%) changed longan orchard to rubber cultivation, 218 acres in area. This was equivalent to 422 farmers and 3,074 acres of cultivation area comparing to the total number of participants and rubber cultivation area in Chiang Mai. During 2003-2004, Chiang Mai had a total longan cultivation area of 94,925 acres. However, this project could help reduce longan cultivation area by only 3.23%. Meanwhile, few participants changed garlic cultivation area to rubber cultivation area. It indicated that only longan orchard area could be reduced but garlic cultivation area could not. Besides, some participants changed other crop growing areas to rubber cultivation area. These would have effects on long-term food security of Thailand. Moreover, during 2011-2012, participants begin to earn income from rubber latex. This might motivate some non-participants to take part in the project due to high prices of rubber latex. However, they should place importance on the appropriateness and cares of rubber cultivation areas. As a whole, the policy was not successful as it should be.

Keywords policy, rubber trees cultivation, longan orchard, Chiang Mai

INTRODUCTION

The launching of Chino-Thai free trade caused import of agricultural products from China, especially garlic. This has lowered the prices of Thai garlic. At the same time, there was an oversupply of longan yields. Thus, Thai government prepared a guideline for reducing garlic and longan growing areas. That is, rubber trees cultivation has been promoted since 2003. At the initial stage it took about 3 years (2004-2006), supported and promoted by the Office of Rubber Replanting Aid Fund (ORRAF). In fact, most of the farmers who got involved in the project had never done rubber cultivation before (Sriprasit, 2008). The supporting fund for project promotion was worth 1,397 million baht (Noonsong, 2003). For the second period, the rubber trees growing promotion was conducted in 7 northern provinces, namely: Chiang Mai, Chiangrai, Lamphun,

Phayao, Lampang, Tak and Mae Hong Son. This was particularly done in the areas where garlic yield was lower than 390 kg per acre. It was expected that 5,139.79 acres of land would be replaced with rubber trees cultivation with the supporting budget of 16,950,000 baht (the Or Por Thor News, 2009).

The previous policy of promoting rubber trees cultivation for replacing garlic and longan growing in Chiang Mai faced a lot of problems. This was because of top-down approach of government. Therefore, it is essential to explore problems in farmer's adoption of this policy as well as their needs. The purpose of this study was to explore how to promote farmers to change garlic and longan growing to rubber trees cultivation in Chiang Mai, Thailand.

METHODOLOGY

Purposive sampling was used from the population of 925 farmers in 17 districts of Chiang Mai, who were participants in rubber cultivating project. The sample group consisted of 10% of farmers in Phrao, Fang, Chaiprakarn and Hod districts which were leading garlic and longan growing areas of Chiang Mai. The sample group was divided into 2 sub-groups: 1) 80 farmers participating in the project and 2) 62 farmers who did not participate (they still grew garlic and longan but some of them did rotation cropping such as rice and garlic in a year). They were chosen by simple random sampling. In addition, there were 3 representatives of the ORRAF, Chiang Mai.

A set of scheduled interviews were used for data collection. Besides, in-depth interview and focus group discussion techniques were used. Data analyses were done by descriptive statistics.

RESULTS

General information of participants and non-participants of rubber cultivating project

Most of the farmers were male. Percentage of male among participants was 81.25% and that for non-participants was 85.48%. Average ages of both groups were close. They had 4 family members on average. The proportion of fourth year elementary school was 37.50% and 51.61%, respectively. They have worked in agricultural sector. The participants had 2 years of experience in agriculture. Less than one-half of participants (40.00%) were dependent on rain for farming. However, more than one-half of non-participants (58.06%) used public water sources for farming. It was also found that the ratio of full time farmers among non-participants was higher than that for the participants (56.45 and 46.25% respectively). Both groups were similar in agriculture career and supplementary job career (Table 1). This implied that agriculture production alone could not generate enough income for daily expenses, even though some of them changed to grow rubber trees.

In addition, most of the participants (85.00%) had their own land (9.68 acres on average). Very few of them (1.25%) encroached reserve forest for farming. However, less than one-half of non-participants (45.16%) had their own land and an income from the agricultural sector was higher than that of those who attended the project (281,854.84 and 172,045.45 baht per year). This might be because many farmers still wanted to grow garlic and longan. Most of the farmers of both groups were members of the Bank of Agriculture and Agricultural Cooperative (BAAC). Besides, they got a short-term loan for farming from the bank. However, sums of their loans for non-participants were higher than those of participants (179,137.93 and 62,727.27 baht, respectively). The interest of the loan was 7.50 baht per year (Table 1). This meant that income earned from the agricultural sector of non-participants was higher than that of participants due to high cost of the investment.

Farmer adoption to participate in the project

Most of farmers received project news through the Office of Sub-District Agriculture and Office of District Agriculture (81.25%) and had no knowledge about rubber trees before (80%).

Table 1 General information of participants and non-participants of rubber cultivating project

General information	Participants (n=80)		Non-participants (n=62)	
	F	%	F	%
Sex				
Male	65	81.25	53	85.48
Female	15	18.75	9	14.52
Age				
40 years and below	9	11.25	2	3.23
41-50 years	29	36.25	21	33.87
51-60 years	23	28.75	32	51.61
More than 60 years	19	23.75	7	11.29
	52.41		52.95	
Educational attainment				
Fourth year elementary school	30	37.50	32	51.61
Sixth year elementary school	9	11.25	14	22.59
Lower secondary school	13	16.25	7	11.29
Upper secondary school	17	21.25	7	11.29
Higher certificate and higher	11	13.75	2	3.22
No. of family members				
1-3 peoples	21	26.25	19	30.65
4-6 peoples	55	68.75	40	64.51
More than 6 peoples	4	5.00	3	4.84
	4.25		3.90	
Agricultural experience				
20 years and below	27	33.75	25	40.33
21-30 years	21	26.25	18	29.02
More than 30 years	32	40.00	19	30.65
	27.44		25.37	
Water used for agriculture				
Rain	32	40.00	0	0.00
Public canal	23	28.75	36	58.06
Irrigation and others	25	31.25	26	41.94
Main and supplementary job career				
Full-time farmer	37	46.25	35	56.45
Agriculture and trading	13	16.25	14	22.58
Agriculture and hired worker	17	21.25	0	0.00
Others	13	16.25	13	20.97
Land holding for farming				
Own	68	85.00	28	45.16
Rental	1	1.25	12	19.35
Own and rental	4	5.00	21	33.87
Others	7	8.75	1	1.62
Source of income				
Agricultural sector	37	46.25	34	54.84
Non-agricultural sector	3	3.75	0	0.00
Agricultural and non-agricultural sector	40	50.00	28	45.16
Annual income from agricultural sector in average	172,045.45		281,854.84	
External capital source (n=51, n=47) *				
The BAAC	43	84.31	40	85.11
Village Fund	5	9.80	1	2.12
Agricultural Cooperatives	3	5.89	6	12.77

*Only farmers who have got an external capital source for rubber tree cultivation

More than a half (68.75%) decided to participate in the project due to the governmental promotion (not more than 5.93 acres). But 31.25% of them were farmers having potential in the capital for investment. More than one-third of them (37.50%) grew rubber trees in the areas ichused longan orchards (about 213.49 acres). This was equivalent to 422 farmers and 3,074 acres of cultivation area comparing to the total number of participants and rubber cultivation area in Chiang Mai, respectively. During 2003-2004, Chiang Mai had a total longan cultivation area of 94,925 acres (Longan Information Center, 2010). However, this project could help reduce longan cultivation area only to 3.23%. Surprisingly, only one farmer (1.25%) grew rubber trees in the areawhichused to garlic growing. It indicated that Longan orchard area could only be reduced into a small number but not for garlic cultivation area.

About one-half of farmers (51.25%) were not sure about the return obtained from rubber cultivation. However, some of them (20.00%) expected to earn a monthly income from rubber cultivation for about 1,000 baht. They believed that the project was a good one. Less than one-half of them (41.24%) stated that it was because there was staff of the ORRAF that often gave them advice about rubber trees growing. About one-fourth of them (23.75%) thought that their livelihood would be better due to an increase of income. Only 10% of the farmers stated that the project took long time to give yields and it was costly for care-taking.

The project implementation in accordance with the government's policy

The project implementation in 2003 lacked readiness in various aspects such as a number of concerned personnel, budgets and that farmers did not have knowledge and understanding about rubber trees cultivation. At the initial stage, farmers must register to be enrolled in the project at the Office of District Agriculture. They had to grow rubber trees alone without assistance of c or any suggestion. This was due to limited budgets allocated to concerned agencies. In 2004, however, government had allocated the budgets through ORRAF, aimed to provide knowledge and understanding about rubber trees cultivation for farmers. It takes 7 years and 6 months for rubber trees to give yields. Nowadays, ORRAF is still responsible for providing knowledge and understanding about rubber trees cultivation.

The ORRAF revealed that the project was not so successful because of the following factors:

1. The project implementation was based on political objectives. Thus, at the initial stage of the project there was no concerned agency for project monitoring. Moreover, farmers in northern Thailand did not have experience in rubber trees cultivation before.
2. Farmers did not adequately take care of rubber trees which they had grown i.e. grass mowing, fertilizer application, prevention of insects and diseases.
3. Budgets allocated by government were small

Based on the farmers, the following was concluded:

1. The prepared rubber seedlings were inadequate.
2. Lack of knowledge, extension, and monitoring caused farmers to misunderstand rubber trees cultivation, e.g. distance between rubber trees; growing rubber seedling with longan and weeds. These had an effect on growth performance of rubber trees.
3. There were no concerned agencies for giving farmers advice when they had problems. Thus, farmers had to do trial-and-error by themselves.

Needs of the farmers who did not participate in the project

More than one-half of non-participants (64.90%) used to receive policy news through television. Nevertheless, they did not attend the project because they did rotation cropping. They were cultivating rice from July to December and garlic from January to April, and so that the cultivation land areas were inappropriate for growing rubber trees. Some of them (14.52%) stated that longan and garlic were giving yields even though their prices were quite low. So, they needed the government to assist them in terms of price of longan and garlic, reduction of production costs and agricultural products imported from neighboring countries, especially from China.

From the focus group discussions with farmers, the following were revealed:

1. Inappropriateness of the cultivation areas - Most of the cultivation areas were rice paddy fields which were inherited from parents and limited. Some farmers sold their lands to capitalists and could not expand their cultivation areas because they were close to reserved forest.
2. Worthiness - Longan growers did not want to cut their longan trees since they were giving yields once a year. Longan trees were worthy since longan growers only had to work hard at harvesting season. On the other hand, it took a long time for rubber trees to give yields.
3. Agricultural experience - Farmers were confident in their long time longan and garlic growing experiences, and believed that they were better at growing longan and garlic than rubber trees. Yet, some farmers showed interest in growing rubber trees and they were waiting to see the success of rubber trees growing of others.
4. Assistance of the government
 - 4.1 Farmers wanted the government to assure their income and yields. This was because they were not able to grow other crops since they had long experience in longan and garlic growing. If the government could do it, it might motivate the new generation to grow rubber trees. Surely, selling the cultivation lands to capitalists would be decreased.
 - 4.2 Farmers wanted the government to provide them with production factors e.g. fertilizer, pesticide, insecticide, etc. This could be done through the village fund management by the community.
 - 4.3 The government should reduce import quota of Chinese garlic. This was because its price is lower than that of Thai garlic. Although there are garlic and red onion grower cooperatives in Thailand, Thai garlic could not compete against garlic from China.

DISCUSSION

It is essential that the policy determination for local development be relevant to the needs of the community. Also, it must place importance on environmental conditions. This must be supported by various social sectors as well as local people. Besides, collaboration and coordination among concerned parties based on the participatory process are required in order to achieve the goals (Mingchai and Yotsuk, 1998). As the rubber trees cultivation replacing garlic and longan growing is the political policy, it lacked the readiness in planning, personnel, and budgets. There were a lot of problems at the initial stage. Moreover, farmers did not have experience in rubber tree growing. More than 200 farmers failed to join the project. This was a wasteland in providing budgets for rubber seedling. After the government had allocated the budgets to ORRAF in 2004, some concerned agencies assisted and provided knowledge to the farmers more than ever. However, the project was not so successful on promoting the reduction of longan and garlic growing areas. This was because few farmers that joined the project changed to grow rubber trees (213.49 acres, 442 farmers). In fact, Chiang Mai has longan growing areas of 92,738.45 acres (Longan Information Center, 2010). However, this project could decrease longan growing area at a very low level. At the same time, garlic growing areas could not be decreased at all. Some farmers used the areas usually for growing other crops to grow rubber trees. This might have a long-term effect on food security of the country and the world.

Based on the policy, SWOT analysis revealed that the policy is supported by the government focusing on agricultural development and villagers' livelihood. There were some concerned parties assisting the project such as Office of District Agriculture; Office of Provincial agriculture, and ORRAF. On the other hand, the project was under urgent policy, and so the government sometimes made modifications which might have an effect on the project management and discontinuation of care-taking. Moreover, farmers did not have enough knowledge about rubber trees cultivation. Besides, lack of holistic operation and no complete coordination among concerned agencies were the policy's weaknesses. Farmers might be interested in joining in the project due to a high demand of rubber in the world and an income might satisfy them. But, it is difficult to expand rubber growing areas since there is a limitation on land holding and reserved forest encroachment. Also, the limitation on external loan sources and high interest rates are the policy's threats.

CONCLUSION

The project was under a policy of promoting rubber trees cultivation for replacing garlic and longan growing. This aimed to avoid the competition of yields against the neighboring countries due to China-Thai Free Trade Agreement and to increase the income of farmers for better livelihood. Since it is an urgent policy, there were problems to be resolved in terms of the : 1) *structural deficiency* - this policy needs coordination among concerned parties such as the Ministry of Agriculture and Agricultural Cooperatives, the Ministry of Commerce, and other agricultural institutes, which was not found in this project; 2) *the deficiency on risk management* - risk factors include natural calamities, diseases, insects, etc. Indeed, the government did not promote yield assurance management as well as rubber market; 3) *development of agricultural sector for the reduction of unfair treatment* - Goals of the project did not focus on unfair treatment such as income and yield assurance systems and the diffusion of information about said systems; and 4) *stakeholder participation* - the policy still lacked collaboration among production sector, market sector and concerned agencies in terms of agricultural planning and development for the reduction of environmental impacts.

As a whole, the initial stage of the project was not so successful. However, there is a high tendency that farmers of the two groups will join the project and expand rubber growing areas in the future. The farmers who did not join the project were waiting for the project outcomes performed by their neighbors. The rubber trees will give first yield during 2011-2012. They might become interested in growing rubber trees if they find that it is worthwhile to grow them. Thus, the project might be successful in a long-term if there is further investigation and evaluation in the near future.

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