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Guidelines for developing the management potential of an organic rice farmers group in Chun District, Phayao Province

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Abstract The guidelines for developing the management potential of an organic rice farmers group in Chun District, Phayao Province, in Thailand are investigated. The result revealed that farmers in the strong group had 6.87 years of organic rice cultivation experience, 480.36kg (per rai) of production, and an average net income (per rai) of 4,177.83baht, with being certified only 20.56% by Organic Farming Standards. The hypothesis testing revealed that farmers in strong and weak groups had differing opinions on the potential management operation at a statistical level of 0.05 in seven aspects. These consisted of leader and management, operation planning, marketing management, knowledge and information management, member management, product management, and operation. Therefore, the guidelines for developing the management potential of an organic rice farmers group in Chun District, Phayao Province were three aspects of development as creating a new generation of farmers as a leader, developing group management process and making the development plan of the potential organic rice production for members continuously. In addition, the relevant government agencies should promote mentoring as the tool of transferring knowledge and production skills, exchanging experience, and connecting to the market for learning between two groups of farmers. They must advise, support and assist the farmers in implementing operations to achieve the goal effectively, especially in the early stage of farmers are promoted the organic rice production to farmers.

Keywords: Management potential, Organic rice, Phayao, Thailand

Introduction

Thailand started to promote the cultivation of organic rice in 1991. According to the statistics for 2016, Thailand had 52,181.25 rai available for organic rice cultivation, certified by the Organic Rice Farming Standards to produce approximately 15,000 tons of organic rice. Compared to 1993, when only 2,000 tons of organic rice was produced, Thailand has experienced average growth of 50% per year (Kasikorn Research Center, 2007).

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Therefore, in 2017, the government identified organic rice production as part of its policy to raise agricultural standards under the National Organic Agriculture Development Strategy 2017–2021, with the aim of increasing the available organic farming area by no less than 20% per year (Department of Rice, 2019). Consequently, the promotion of organic rice cultivation has also resulted in increased income for the farmers. The majority of organic rice production in Thailand is performed using individual cultivation methods, resulting in many organic rice farmers facing problems and limitations, ultimately affecting their incomes and lifestyles (Department of Agriculture Extension, 2016). Therefore, one way to solve this problem is to encourage farmers to form groups, strengthening their capabilities and helping them to achieve a balance with the sustainable management of agricultural resources and the environment (National Organic Agriculture Development Board, 2017). The integration of organic rice farmers in Thailand has helped to make them strong and successful. They can develop continuously to increase membership, funding, production, and income for their members. However, some groups of farmers still face problems and obstacles in the operations of their groups (Surpaen, 2012).

Phayao Province has implemented a development strategy covering all nine districts. Chun District in Phayao Province has been designated as the source of organic rice production for export—promoting organic rice cultivation in farmers groups to help increase their competitiveness. There are currently 11 groups in total with 252 members. According to an assessment of potential community enterprises in 2018 by the Department of Agricultural Extension, there are only three groups of successful farmers (Chun District Agriculture Office, 2018). However, most farmers in the area are not strong enough to be self-reliant, resulting in some groups stopping their activities (Rattana, 2016). For this reason, it is interesting to study the guidelines for developing the management potential of an Organic Rice Farmers Group in Chun District, Phayao Province, and establish if they are appropriate and effective. The findings of this research were to develop an Organic Rice Farmers Group in Chun District, Phayao Province, and ensure to adapt the management guidelines to farmers operating practices in the area.

Materials and methods

The population in this research consisted of farmers who were the members of an Organic Rice Farmers Group in Chun District, Phayao Province, which hads 11 groups and 232 members. The researcher used the criteria for assessing the potential of community enterprise groups from the Department of

Agricultural Extension to assess the potential of the Organic Rice Farmers Group (Department of Agriculture Extension, 2018). The group is divided into two sub-groups of organic rice farmers as follows:

Group 1: Three groups of strong farmers with a total membership of 106, consisting of Rice Seed Promotion and Production Community Center of Chun Subdistrict Group, Si Chom Chaeng Organic Rice Community of Hong Hin Subdistrict Group, and Mae Chun Organic Rice Community Enterprise Group.

Group 2: Eight groups of weak farmers with a total membership of 146, consisting of Rice Community Center of Phra That King Kaeng Subdistrict Group, Khaokamphayao Rice Farmer Community Enterprise Group, Ban Don Chai Pattana Community Enterprise Group, Ban Rong Du Agriculture Safety Group, Rice Seed Promotion and Production Community Center of Huai Yang Kham Subdistrict Group, Ban Huai Kang Organic Rice Group, Ban Huai Kang Pattana Organic Rice Group, and Ban Xia Organic Rice Group.

The researcher used Taro Yamane's formula to calculate the sample size with a tolerance level of 0.05. There were 84 samples in the strong farmers group and 107 in the weak farmers group. Simple random sampling by the lottery method was applied in this study, taking the names of farmers registered with the Department of Agriculture Extension in 2019 to obtain the required number. An interview schedule was used as the research tool with a confidence level of 0.99 according to Cronbach's alpha. The research data was collected from June 2020 to March 2021 and then analyzed using descriptive statistics such as percentage, mean, maximum, minimum, and standard deviation. The inferential statistics were used to compare the mean difference between two independent variables (Independent sample t-test).

To obtain the farmers' opinions on the operational potential of an Organic Rice Farmers Group in Chun District, Phayao Province, the researcher used the five-point Likert scale to score the level of farmers' opinions: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, and 5 = Strongly Agree. Following the data collection, the researcher found the mean and divided it into three levels to interpret the farmers' opinions on the operational potential of their group, namely low (mean 1.00–2.33 points), moderate (mean 2.34–3.63 points), and high (mean 3.64–5.00 points), respectively.

Results

Personal characteristics, economic, and social positions of farmers as members of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

The results revealed that the farmers in Chun District had an average area of 14.12 rai for growing organic rice, producing an average crop of 524.56 kilograms per rai. In addition, the farmers received an average price of 16.81 baht per kilogram for their organic rice, equating to an average net income of 7,037.83 baht per rai. The weak farmers group were averaged age of 57.43 years on with averaged 6.87 years experience growing organic rice. During cultivation period of the years 2019/2020, farmers had an area of 7.52 rai for growing organic rice, producing an averaged yield of 480.36 kilograms per rai. In addition, the farmers received an average price of 12.36 baht per kilogram for their organic rice, equating to an average net income of 4,177.83 baht per rai (Table 1). The data reflected the issues that differentiate the experiences of the two groups of farmers in growing organic rice in the areas involved, and averaged production. In the past, farmers in the strong groups grew rice for household consumption without the use of chemicals. By gaining knowledge of organic rice production from relevant government agencies, farmers quickly learned to grow the rice according to organic standards. As a result, the production capacity per rai is continued to increase income, motivating farmers to grow more organic rice over the past few years by expanding the cultivation area.

Table 1. Personal characteristics, economic, and social positions of farmers as members of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Personal Characteristics, Economic, and Social Position	Strong Farmers Group (n = 84)		Weak Farmers Group (n = 107)	
	Mean	S.D.	Mean	S.D.
1. Age	56.67	9.56	57.43	8.98
2. Years' experience of growing organic rice	12.69	9.46	6.87	7.72
3. Size of area for growing organic rice (rai)	14.12	12.98	7.52	5.23
4. Organic rice produced (kg per rai)	524.56	36.52	480.36	36.06
5. Selling price (baht per rai)	16.81	1.59	12.36	1.25
6. Net income received from growing organic rice (baht per rai)	7,037.83	1,157.82	4,177.83	671.27

The results revealed that 94.05% of the strong farmers group achieved the required organic rice standard with 82.14% of the heirs inheriting the business and 97.60% decided to continue growing organic rice for the next one to ten years. Whereas in the weak farmers group, only 20.56% achieved the required organic rice standard with 71.03% of the heirs inheriting the business, and 70.09% decided to continue growing organic rice for the next one to ten years, (Table 2).

The data reflected the issues that differentiate the two groups of farmers, namely Organic Rice Standard certification and the heirs inheriting the business. The findings revealed that the heirs of the strong farmers group participated in the production of organic rice, especially from the marketing perspective. They were increased sales through online channels, enabling organic rice products to be sold at a higher price and developing their market share to support production. However, in the weak farmers group, most of the farmers faced the problem of not having a large enough market to support their organic rice production. Most of the farmers sold their products to the local rice mill. This may be due to the majority of farmers that not meet the required organic rice standard certification.

Table 2. Occupation pass-on, decision-making on growing organic rice in the next one to ten years, and the Certified Organic Rice Standards for farmers in Chun District, Phayao Province, Thailand

Personal Characteristics, Economic, and Social Position	Strong Farmers Group (n = 84)	Weak Farmers Group (n = 107)
	Percentage	Percentage
1. Succession of heirs in organic rice cultivation	82.14	71.03
2. Positive decision to grow organic rice in the next to 10 years	97.60	70.09
3. Certified under the Organic Rice Standards	94.05	20.56

Comparison of group members' opinions on the operational potential of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

The researcher was compared the opinions of members concerning the operational potential of an Organic Rice Farmers Group in Chun District, Phayao Province by dividing the assessment criteria for community enterprise groups according to the Department of Agricultural Extension into seven categories as presented below.

Leadership and management

The comparative results for the farmers' opinion level toward the operational potential of an Organic Rice Farmers Group (leadership and management) revealed that farmers in the strong group expressed in different views to farmers in the weak group at the statistically significant level of 0.05 in 13 matters (Table 3).

Table 3. Comparison of group members' opinions on the operational potential of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Leadership and Management	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	Mean	S.D.	Interpretation	
1. Setting goals for group and leadership development	3.96	0.80	High	3.00	0.90	Moderate	7.72*
2. Involving members in goal setting/plans	3.92	0.76	High	2.80	0.83	Moderate	9.63*
3. Management ability of the leader	4.07	0.72	High	2.86	0.88	Moderate	10.41*
4. Social responsibility	3.95	0.88	High	2.69	0.88	Moderate	9.82*
5. Consumer responsibility	4.26	0.66	High	2.90	0.79	Moderate	12.74*
6. Managing the structure/division of operations	3.98	0.64	High	3.09	0.82	Moderate	8.37*
7. Rules and regulations	3.95	0.64	High	2.96	0.91	Moderate	8.82*
8. Stock mobilization	3.76	0.83	High	2.57	1.17	Moderate	8.24*
9. Managing financial records	3.86	0.81	High	2.64	1.08	Moderate	8.91*
10. Managing income and benefits	3.70	1.02	High	1.85	0.79	Low	14.20*
11. Disclosure of financial information to members	4.02	0.64	High	2.87	1.00	Moderate	9.68*
12. Managing members' welfare	3.61	1.03	Moderate	1.84	0.83	Low	12.81*
13. Activities for public benefit	3.69	0.98	High	1.94	0.83	Low	13.29*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

Operation planning

The comparative results for the farmers' opinion levels on the operational potential of an Organic Rice Farmers Group (operation plan) revealed that farmers in the strong group showed in different views on operation planning to

the four weak farmers group at the statistically significant level of 0.05 (Table 4).

Table 4. Comparison of the group members' opinions on the operational potential (operation planning) of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Operation Planning	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	Mean	S.D.	Interpretation	
1. Operation planning preparation	3.71	0.69	High	2.39	0.90	Moderate	11.52*
2. Clarifying plans with members	3.76	0.80	High	2.37	0.86	Moderate	11.38*
3. Implementation of plans	3.52	0.92	High	1.97	0.85	Low	12.04*
4. SWOT analysis and improvement	3.58	1.06	High	1.84	0.86	Low	12.27*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

Marketing management

The comparative results for the farmers' opinion levels on the operational potential of an Organic Rice Farmers Group (marketing management) revealed that farmers in the strong group showed in different views on the operational potential of marketing management to the two weak farmers group at the statistically significant level of 0.05 (Table 5).

Table 5. Comparison of the group members' opinions on the operational potential (marketing management) of an Organic Rice Farmers Group in Chun District, Phayao Province

Marketing Management	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	S.D.	Mean	Interpretation	
1. Distribution sources and marketing networks	3.82	0.97	High	1.75	0.86	Low	15.63*
2. Tracking consumer and market demand	3.86	0.96	High	1.79	0.89	Low	15.39*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

Knowledge and information management

The comparative results for the farmers' opinion levels on the operational potential of an Organic Rice Farmers Group (knowledge and information management) showed that farmers in the strong group expressed differing views on knowledge and information management to the farmers in the three weak group at the statistically significant level of 0.05 (Table 6).

Table 6. Comparison of the group members' opinions on the operational potential (knowledge and information management) of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Knowledge and Information Management	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	Mean	S.D.	Interpretation	
1. Seeking knowledge for group development	3.94	0.63	High	2.79	0.97	Moderate	9.88*
2. Systematic and up-to- date information storage	3.95	0.62	High	2.59	0.98	Moderate	11.72*
3. Communication and advertising information to the public for members and networks	3.81	0.94	High	2.19	1.01	Low	11.37*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

Group member management

The comparative results for the farmers' opinion levels on the operational potential (group member management) of an Organic Rice Farmers Group resulted that farmers in the strong group revealed in different views on group member management from the four weak farmers group at the statistically significance level of 0.05 (Table 7).

Table 7. Comparison of the group members' opinions on the operational potential (group member management) of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Group Member Management	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	Mean	S.D.	Interpretation	
1. Membership conditions	3.98	0.81	High	3.05	0.93	Moderate	7.29*
2. Membership development	3.96	0.87	High	2.72	1.06	Moderate	8.90*
3. Building members' morale	3.86	0.91	High	2.60	1.05	Moderate	8.86*
4. Members' cooperation	4.24	0.72	High	2.73	1.10	Moderate	10.90*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

Product management

The comparative for the farmers' opinion levels on the operational potential (product management) of an Organic Rice Farmers Group revealed that farmers in the strong group showed in various views on product management from the three weak farmers group at the statistically significant level of 0.05 (Table 8).

Table 8. Comparison of the group members' opinions on the operational potential (production management) of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Product Management	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	Mean	S.D.	Interpretation	
1. Production process	3.95	0.66	High	2.17	0.95	Low	15.35*
2. Post-production process	3.96	0.65	High	2.14	0.88	Low	16.44*
3. Product quality control	3.89	0.86	High	2.10	0.92	Low	13.70*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

Group operation

The farmers' opinion levels on the operational potential (group operation) of an Organic Rice Farmers Group was compared that farmers in the strong group were statistically significant differed views at level of 0.05 in the group operation to the ten weak farmers group (Table 9).

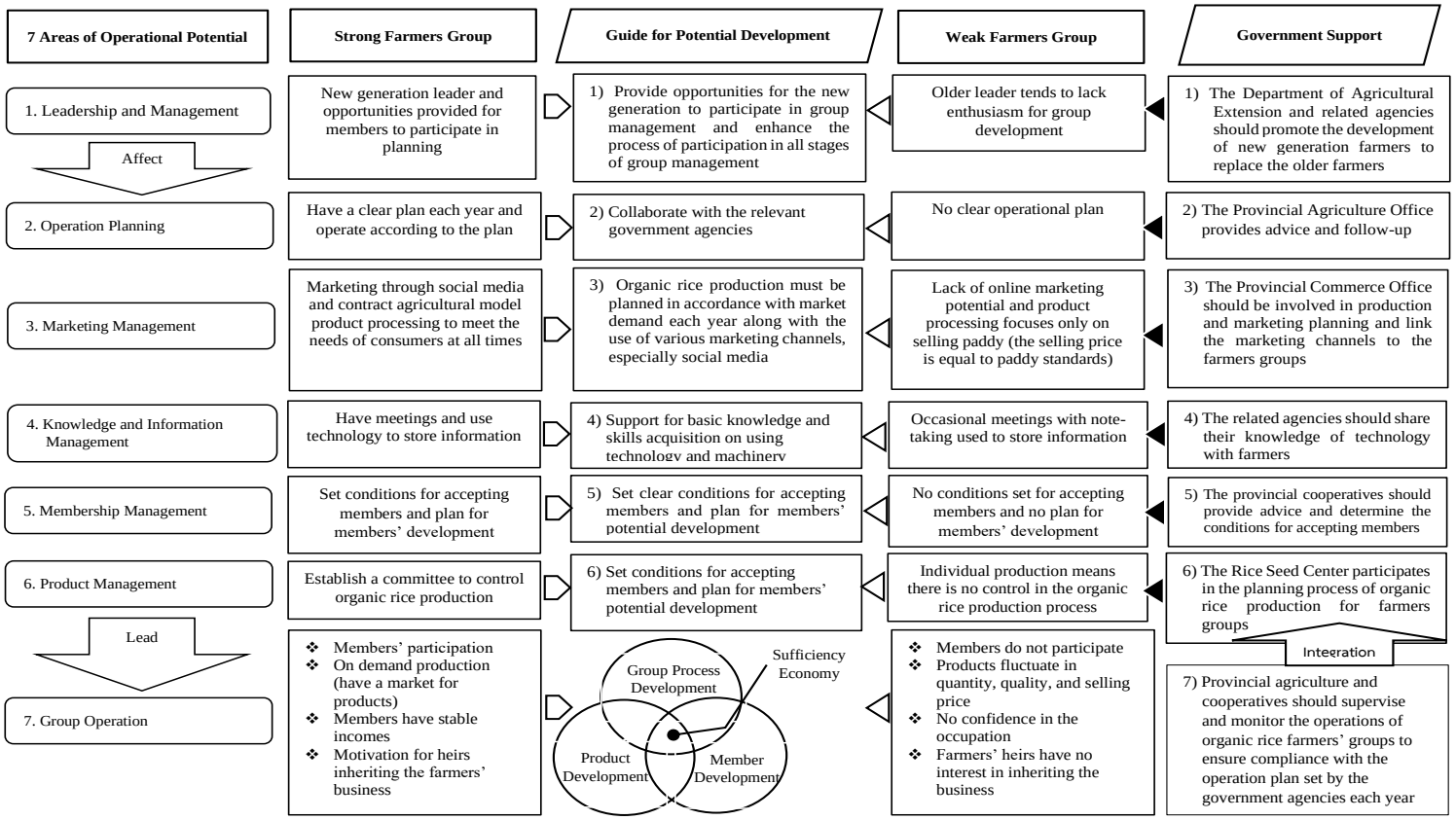
Table 9. Comparison of the group members' opinions on the operational potential (group operation) of an Organic Rice Farmers Group in Chun District, Phayao Province, Thailand

Group Operation	Strong Farmers Group (n = 84)			Weak Farmers Group (n = 107)			t-test
	Mean	S.D.	Interpretation	Mean	S.D.	Interpretation	
1. Reducing group members' expenses	3.89	0.82	High	2.66	1.02	Moderate	9.23*
2. Increasing group members' income	3.93	0.88	High	2.64	1.04	Moderate	9.32*
3. Better quality of life for members	4.06	0.72	High	2.83	1.04	Moderate	9.63*
4. Customers' satisfaction with the product	3.94	0.72	High	2.79	0.84	Moderate	10.27*
5. Most/all products certified according to the standard	3.85	0.96	High	2.06	1.04	Low	12.16*
6. Product differentiation to meet market Demand	3.69	0.93	High	1.97	1.04	Low	11.86*
7. Reducing group operational activities	3.80	0.79	High	2.53	0.87	Moderate	10.50*
8. Successful group activities	3.92	0.82	High	1.72	0.87	Low	17.87*
9. Increasing knowledge and skills of members	3.89	0.76	High	2.49	1.00	Moderate	11.02*
10. Benefits provided to the community from the group	3.96	0.75	High	2.44	1.03	Moderate	11.83*

Note: Opinion levels on the operational potential: mean 1.00–2.33 = Low, mean 2.34–3.63 = Moderate, and mean 3.64–5.00 = High

* Statistically significant at the difference level of $P \leq 0.05$

The success of developing management potential for farmers groups in Chun District, Phayao Province depended on the farmers themselves. The relevant agencies should develop the weak farmers group by encouraging the strong farmers group to form a mentoring system. The mentoring system is a tool used in knowledge management to share knowledge and production skills, exchange experiences, and providing a link to the market. Farmers should be encouraged to learn from each other using the Sufficiency Economy Philosophy in group operations and at the individual level to create balance and sustainability in all aspects. In addition, the relevant government agencies in the area should act as coaches, providing advice, support, and help in the farming operation to effectively achieve the desired goals. Therefore, the researcher would like to propose the guidelines for developing the management potential of an organic rice farmers Group in Chun District, Phayao Province, as shown in Figure 1.



Note: Meaning of Symbol ▷ Strengths of Farmers, ◁ Goals for Potential Group Development, and ◀ Government Support

Figure 1. Guideline for developing the management potential of an organic rice farmers group in Chun District, Phayao Province

Discussion

The data analysis found that the management potential of the strong farmers' group was different from the weak farmers' group in 7 aspects. After considering the important factors that affect the management differences of the two groups, it can be summarized as new generation farmers as a leader because they had sacrificed and commitment to work for the group and focus on listening and allowing group members in participating every-single step, as well as using technology and innovation in the group management of various fields such as production planning, data recording, online marketing, etc. Consistent with a study of Haeberle *et al.* (2009), new generation leaders play an important role in management, are professional in working and always use technology and innovation to develop the organization. This is considered an important driving force for the organization to be alert and continuously developed. It also related to the study of Kongtanajaruanun and Cheamuangphan (2021) that found the management of an effective farmers' group must consist of group members' participation factor, supporting factors from government agencies and private organizations, group management factor, and important leadership factor where the leader must have the ability to manage the group. The solid and clear group management process resulted in continuous group activities and coordination with the relevant government agencies in the area. It would allow the group to take immediate action to resolve the operational issue and operate according to the set plan. Consistent with Thuansri and Morathob (2016) who stated that one of the major problems for the organic rice farmers' group is the lack of systematic group management. It affected the product quality and caused trade partners which did not confidence in the farmers. In addition, the appointed group management process helped the farmers to be unity among members, which leaded to cooperation in developing farmers' groups in various fields. It related to the study of Sophonthamthorn (2005) that found unity of the group help in attracting the group members cooperation and helping each other in implementing group achievement as the set goal. The development plan of the potential organic rice production for members is continuously made, such as transferring knowledge and technology of organic rice production, developing organic rice production, processing the product to add the value of organic rice, etc. It provided the ability in producing products to the customers' needs. The members would have a certain income, leading to the moral building in further producing organic rice. Consistent with a study of Songsrirote (2017), who stated that producing certified organic rice as the set goal, obtained benefits from producing organic rice and increased income continuously which it is

become an important part of making farmers successful and stable life. Therefore, the result of the study revealed that in developing the potential of organic rice farmers group management in Chun District, Phayao Province must focus on solving and developing all 3 issues together.

In addition, the relevant government agencies should promote mentoring as the tool of transferring knowledge and production skills, exchanging experience, and connecting to the market are concerned the learning between two groups of farmers. The relevant government agencies must perform coaching to advice, support, and assist in implementing operations to achieve the goal effectively, especially in the early stage of promoting organic rice production to farmers. Consistent with a study of Hauser *et al.* (2016) and Haryanto and Yuniarti (2017) stated that follow-up and advice farmers will help to develop their knowledge, skills, and attitude. The increases in farmers' knowledge will impact farmers' abilities, knowledge adaption, technology, and innovation in their fields. It will result in the production efficiency of farmers and increase income.

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