

## CHAPTER 5

### CONCLUSIONS

#### Research Conclusion

This study on farmers' participation in sustainable agricultural development in the highland area of the Royal Project in Chiang Mai province

Population of the study was considered as quantitative sample, included 399 farmers of the Royal Project area in Chiang Mai province. The sample group was collected by using Multi-Stage Sampling. Questionnaires for interviews were used as a research tool for data collection. Frequency, Percentage, Means, Standard Deviation, and Stepwise Multiple Regression Analysis were employed data analysis. Moreover, the process of farmers' participation in sustainable agricultural development in the highland area, was considered as qualitative data, the sample of the research; Huai Som Poi(Karen)18, Nong Hoi(Kmong)10, Mok Cham(Aka)17, Tin Tok(Local Lanna)15, Mae Poon Luang(Lesu)14 and Nong Khieo(Lahu)15 and Pa Miang(Local Lanna)19

Including farmers, chief officer, extension staff, researcher, co-researcher, and farmers of the Royal Project Development Center Chiang Mai. The research findings are as follows.

#### 1. Characteristics of local people, economic, and society of farmers

Characteristics of local people, economic, and society of farmers effect to farmers' participation in sustainable agricultural development in the highland area of the Royal Project;

**Education:** The research found that most farmers did not study in school.

**Holdings area:** It was found that each house separated the land as fruit area for the average 6.30 rais, vegetable area for 2.30 rais, horticulture area 2.80 rais, and hybrid agriculture area for 0.78 rais, animal husbandry for 0.03 rais, resident area for 0.70 rai, and other areas for 0.44 rai. The average holdings area was 13.50 rais.

**Participation in agricultural development activity:** The research found that most of the farmers' participated in agricultural development activity in the past year for 1-3 times per year. The average time of participation was 3 times per year.

**The benefits of sustainable agriculture in the highland area:**

More resource of food for consumption, convenient Transportation, water resource for agriculture, grouping of farmers for community enterprises, processing of agricultural product market, extensive agricultural conservation systems, knowledge soil and water conservation cultivation systems, reduces the drugs plant cultivation, more income from selling various agricultural products, eco-agricultural tourism, and reduce unemployment in the area were benefit of sustainable agriculture. According to research, it is found that most of the farmers benefit from sustainable agricultural development in the highland area at moderate level.

**2. Situation of farmers' perception on participation in sustainable agricultural development in the highland area of the Royal Project.**

The study of farmers' perception on participation in sustainable agricultural development in the highland area of the Royal Project in Chiang Mai province found that the sample group was moderately participated. The issues are separated as follows.

**Consultation or Discussion**

The most participated consultation activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were consultation with the staff to acknowledge farmers and interested people, consultation before, during, and after the cultivation, and consultation in agricultural development planning with staff.

**Offering solutions and decision making**

The most participated offering solutions and decision making activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were propose the production and marketing plan, propose the cultivation project/activities, during, and propose the idea of management and production factors.

### **Coordination**

The most participated coordination activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were coordination of grouping, operation of the cultivation project/activities, and coordination of the promotion of plant cultivation knowledge.

### **Operation**

The most participated operation activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were planning the production process with the support staff, vertiver cultivation in the soil and water conservation planting system, and operation according the rules and regulations of production factors of the Royal Project and the Ministry of Agriculture and Cooperation.

### **Caring**

The most participated caring activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were participation in soil and water conservation activities, Participation in grouping for keeping basic structure, and participation in promoting the forest conservation campaign.

### **Benefit**

The most participated benefit activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were having more knowledge of agriculture production and marketing, keeping natural resources and environment, and gaining more income.

### **Monitoring and evaluation**

The most participated monitoring and evaluation activities on sustainable agricultural development projects in the highland area in soil and water conservation planting project were monitoring and evaluation of operation, trainings and field trips, monitoring and evaluation of production and marketing problems, and monitoring and evaluation of soil and water testing.

To consider the 7 issued of farmers' participation in sustainable agricultural development in the highland area in soil and water conservation, it was found that

farmers' participated in the consultation proposing solution and decision making, coordination, operation, caring, benefit, and monitoring and evaluation, respectively.

According the results of the participation of farmers in sustainable agricultural development in the Highland area of the Royal Project and the economical planting in the water and soil conservation of the Royal Project, the results showed that the participation of farmers showed different levels in each issue. Farmers were involved in the consultation, coordination, action, maintenance and benefits in medium level, whereas proposed solution, decision-making process and evaluation were low level. Overall, farmers were involved in the medium level. Although development authority focused on the participation of farmers, they, in practical, still have had less participation especially on its proposed solution and decision for making development activities. Therefore, the main goal of development should focus on creating the participation of farmers in all areas of developing skills of participation and critical to the success of the aim that are consistent with appropriate.

### **3. Factors contribute to the farmers' participation in sustainable agricultural development in the highland area of the Royal Project.**

#### **3.1 Factors for farmers**

It was found that 4 factors related and effected to farmers' participation in sustainable agricultural development in the highland area as follows:

1) The benefits of sustainable agricultural development in the highland area related positively with participation in the sustainable agricultural development in the highland area with the statistical significant at level .01.

2) The area holding related positively with farmers' participation in the sustainable agricultural development in the highland area with the statistical significant at level .01

3) The participation in agricultural development activities related positively with farmers' participation in the sustainable agricultural development in the highland area with the statistical significant at level .01

4) The education related negatively with farmers' participation in the sustainable agricultural development in the highland area with the statistical significant at level .01

For other variables, such as age, number of household members, numbers of school age member, number of working age members, total household income, channels of agriculture information, contact with extension staff and government officers, participation in local activities, participation in agricultural training and field trips, duration of settlement, knowledge of sustainable agricultural development in the highland area were not related to farmers' participation in the sustainable agricultural development in the highland area with statistical significance. Considering the 4 factors, it can be described the variability of farmers' participation in the sustainable agricultural development in the highland area that the variability was approximately 10.0 ( $R^2 = 0.107$ ) percent. It is shown that there are other variables that effect the farmers' participation which were not studied in this research.

The result of factors effecting the participation of farmers in sustainable agricultural development in the Highland area of the Royal Project and the economical planting in the water and soil conservation in the Royal Project showed that the personal of the factor effecting farmers' participation was the education level of farmers. The results showed that farmers who have lower education participated than higher education. Because farmers who participated in activities though that they would get the benefits from participating in activities to their families. In addition, benefits from the experience of agriculture and take part in agricultural development were a factor that made farmers' participation. Because they got a positive experience that have a positive attitude in the implementation of such. Furthermore, farmers who had many land ownership in sustainable agricultural development in the Highland area participated more than farmer who had lower land ownership. So, the factors mentioned above, by the developer should be used for the selection of farmers for promotion of crop production and achieve the objectives with high effectiveness.

### 3.2 Factors for the Royal Project Development Center

Factors stimulate and develop to success in participation process

1) Policy of Royal project about farmers' participation in the development project and utilization of the farmers' leader in various fields to be collaborator with staffs and accepted from farmer group that farmers selected for participation process. Then, collaborator will liaise between Royal Project Development Center and community.

2) Participation among farmers, staffs, academicians etc. develop and stimulate on various plant production. Participation with among those people can reduce combat that take place from production and marketing in the present and future, the fundamental of agriculture studied of farmer's group by farmers' participation and staffs' observation.

4) Planning for problem solution studied of farmers' participation and each farmer done the follow of project, training and field study visiting as very important to increase the planting, monitoring and evaluation by farmers and staffs in the field.

5) Farmers in the follow of the stimulation plan need to share their opinions to staffs; additionally, accept the comment, enthusiasm, and collaboration ideal to be a team work.

6) Farmers and staffs in extension of Royal Project Development Center have to plan the planting stimulation as the tool for operation and monitoring all steps.

7) Staffs and farmers have to intent all the steps of participation process.

#### **4. Problems and suggestions of farmers' participation in sustainable agricultural development in the highland area of the Royal Project in Chiang Mai province.**

##### **Problems of farmers' participation were found as follow:**

- 1) Not enough time for participation in activities due to plenty of works.
- 2) The lack of understanding of the benefits of participation, so, farmers did not interest in the participation.
- 3) The lack of good public relations, as well as cultivation of single-plant provided faster economic results than sustainable agriculture. Therefore, farmers did not inter in participation.
- 4) Lack of grouping, so there were no bargaining powers with governments in developing programs. The command was top-down process. There was participation of farmers in the process.
- 5) Farmers were lack of project monitoring and evaluation continuously
- 6) They lack of evaluation after the project in order to find ways of improvement in operating of the next projects.

##### **Farmers' suggestion towards participation in SAD in the highland area of the Royal Project in Chiang Mai province**

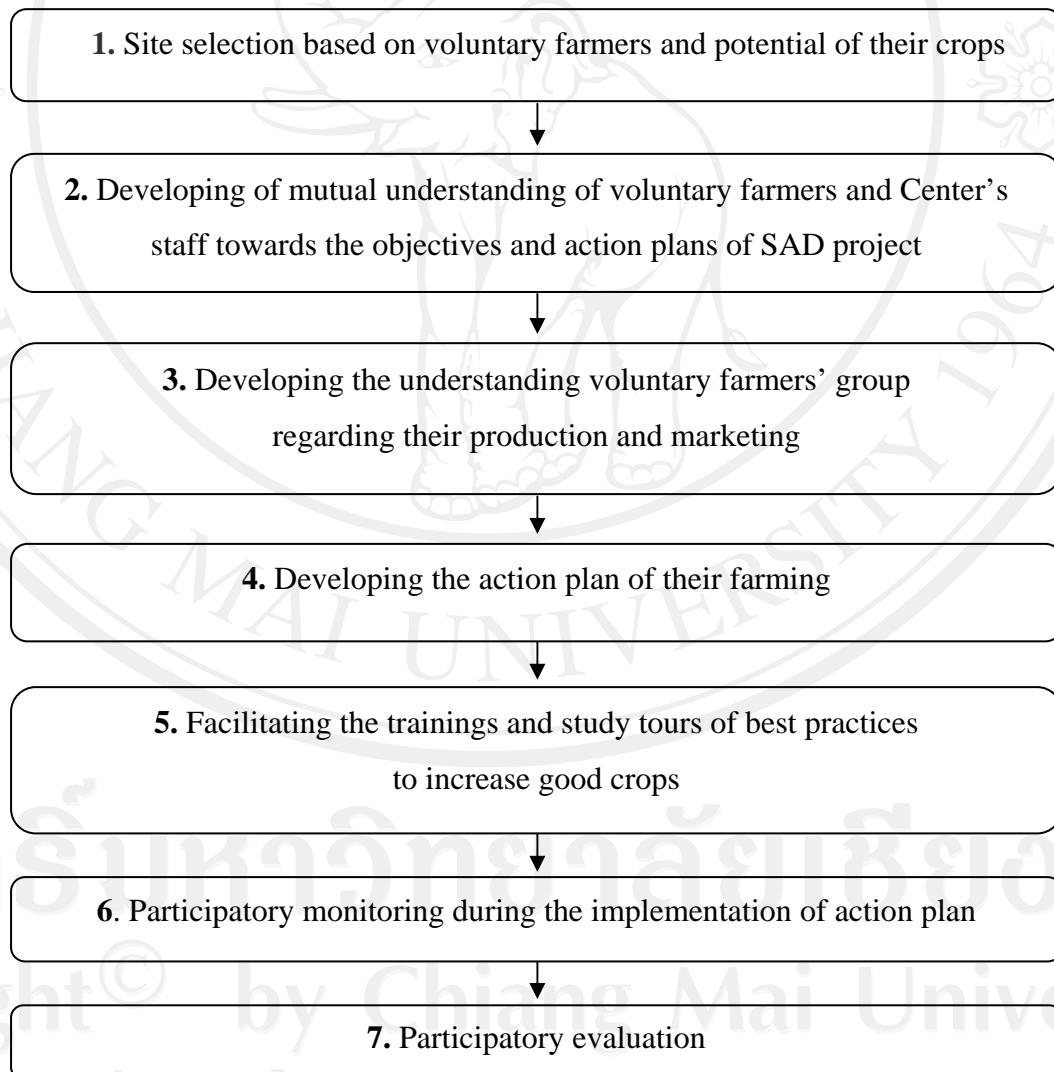
The suggestion of farmers about the development was that the organizations should let farmers to participate in coming project in every step. Moreover, the training courses of participation should be arranged. The leaders of communities should participate more with the development authority.

The results of problems of farmer to participate in the development in sustainable agricultural development in the Highland area of the Royal Project showed that most problems of farmers wasn't have time to participate in activities organized develop agency. Although the average household labor have more than two people who can exchange with each other, they still participated in some activities due to they focused on livelihood more than others. Nevertheless, another problem was lack of good public relations of agencies which was one reason that farmers did not participate in development activities. Then, there were affecting the farmer's

knowledge in participation as well. Thus, development agencies have to promote and accelerate the understanding that farmers know the purpose and goals clearly for good response and good relationships both parties.

### **5. The participatory process of farmers in sustainable agricultural development in the highland of the Royal Project.**

The process of farmers' participation in sustainable agricultural development in the highland area of the Royal Project is a participation experimental research. It was found that has 7 steps (Figure 30).



**Figure 30** Process of farmers' participation in SAD in RPDC model



## Discussion

From the hypothesis testing that the general information, economic and social are related to farmers' participation in sustainable agricultural development in the highland area, the research results shows that only 4 factors related to farmers' participation in sustainable agricultural development in the highland area of the Royal Project, that are:

1. The benefit of sustainable agriculture in the highland area found a positive relationship with farmers' participation in sustainable agricultural development in the highland area. It may be because, the farmers who benefit both directly or indirectly from sustainable agriculture in the highland area, especially who had high income both at the past or present, were intended to participate in the development activities.

Injinda (1999) studied the participation in natural resource and environment conservation of Ban Pong community, Pah Pai sub-district, Sansai district, Chiang Mai province. The results showed that, the benefit from natural resources and environment correlated with the level of Ban Pong community participation in natural resource and environment conservation with statistically significant

2. Holdings area in household found a positive relationship with farmers' participation in sustainable agricultural development in the highland area. It may be because of most of the farmers, who own large area, planted in the highland area. They had more options of growing different crops as the promotion of the Royal Project or others government agricultural organization had supported than farmers who own small area. Chaipukdee (1993), studied farmers' participation of raising cattle group, Nakhon Sawan province found that Own area affected the participation of farmers.

3. Participation on the agricultural development found a positive relationship with farmers' participation in sustainable agricultural development in the highland area. It may be because of the farmer who participated on agricultural development many times would know more about the agricultural development activities. Moreover, the farmers received knowledge and benefit from agricultural development. When this information was frequently delivered, the farmers would intend to participate in every activity. According to the previous reason, it causes the number of experienced farmers who had participated in sustainable agricultural

development in the highland area more than the farmers who had less or never participated.

4. Education level found a negative relationship with farmers' participation in sustainable agricultural development in the highland area. It may be because of farmers with low education or uneducated might believe other people easily, especially in support staff. If the farmers see that the extension staff suggested benefit to themselves and family, they mostly participated in that activity more than farmers who had higher education level. Buakleebai (2000) studied the farmers' participation in forest conservation and community development of Ban Pah sak Ngam, wong Nua Sub district, Doi Saket District, Chiang Mai province, it was found that a positive relationship in the participation of farmers' participation in forest conservation and community development with statistically significant.

The other factors including age of household members, members of school age, number of working age members, total household income, channel of information of agricultural development, contact extension staff and government officials, participation in traditions of the village, participation in short time training and of agriculture, duration of settlement in the area and, understanding of farmer's about sustainable agricultural development in the highland area were not related to farmers' participation in sustainable agricultural development in the highland area. The issues were discussed as follows:

1. Age found no relationship with farmers' participation in sustainable agricultural development project in plant cultivation on soil and water conservation. This may be due. Most of the old farmers in the agricultural age professionals have a variety of agricultural activities, planting multiple crops is not the time to attend events that development agencies held in every step is another reason. Not involved in the development of sustainable agriculture on an area of high activity in growing crops in soil and water conservation in a range.

2. Number of household members found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation on soil and water conservation. From Table 5, the average household member was 5 in the extended family. However, it was not many if concentrate working member in the family. It can be one reason that farmers did not have time to

allocate the family members to participate in the sustainable agricultural development in the highland area in the soil and water conservation. Thus, even a member of the household is more or less, they may not intend to participate.

3. Number of school age household members found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation on soil and water conservation. It may be because of the average age of students in the household was 2. It could be burden for farmers to take care, as well as they had enough time to participate the events held by the public, especially during school holidays. This was the reason why farmers were unable to participate in activities on sustainable agricultural development in the highland area in the soil and water conservation.

4. Number of working age members found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation on soil and water conservation. It may be because of each family has members who were able to do agricultural and were able to work in the farm. Therefore, it was not necessary to participate in activities on sustainable agricultural development projects in the highland area in the soil and water conservation. They may need to help each other to do all activities to be completed rapidly.

5. Total household income found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation on soil and water conservation. It may be because of the activities of sustainable agricultural development in the highland area in the soil and water conservation was not caused by gaining household income. However, it may be because of the farmers had no time to participate in activities or they did not see much benefit from participation.

6. Channel of information of agricultural development found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation on soil and water conservation. It may be because of news about the development of agriculture has both positive and negative people who receive such information galangal substance is not much incentive to make access to participate in more activities than those who received the information.

7. To contact with extension staff and government officials found no relationship with farmers' participation in sustainable agricultural development in the

highland area in plant cultivation project on soil and water conservation. It may be because of although, whether the number of contact with extension staff and government officials was more or less, after contact the unimpressive things or negative results may be occurred. This might be the reason why the farmers had no desire to participate in sustainable agricultural development in the highland area in plant cultivation project on soil and water conservation.

8. The participation in village activities found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation project on soil and water conservation. It may be because of although, whether the number of participation in village traditional activities was more or less, it did not more affective to the participation in sustainable agriculture development under highland area than the benefit of sustainable agriculture development or own area.

9. Participation in agricultural training found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation on soil and water conservation. It can be seen that whether farmers experienced in participation of agricultural training or workshop more or less, it was not the important reason not to allow farmers to participate in sustainable agricultural development project in the highland area in plant cultivation project on soil and water conservation.

10. Duration of residence found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation project on soil and water conservation. It may be because of living in the area of the Royal Project Foundation and participated in development activities with the projects continuously was able to make the farmers familiar and would not like to participate. Therefore, whether the duration of residence was more or less, it would not be able to attract farmers' participate in sustainable agricultural development in the highland area.

11. Knowledge of farmers about sustainable agricultural development in the highland area found no relationship with farmers' participation in sustainable agricultural development in the highland area in plant cultivation project on soil and water conservation. It may be because of the farmers had both advantage and

disadvantage understanding of sustainable agricultural development in the highland area. Thus, even the farmers had much knowledge, they would not like to be participated in sustainable development more than those who had less knowledge.

The results showed that the comparison between farmers' participation in sustainable agricultural development in plant cultivation project on soil and water conservation of the Royal Project in the highland area and conventional plant supporting system, that focus the policy of center, showed exactly differentiation. Before this research, Tin Tok Royal Project Development Center as the area of this research focused the following of the policy from the Royal Project Development Center of development and promoting production. Accordingly, they were planter and receive the quota in the final production, thus producing problems in the performance of the Tin Tok Royal Project Development Center such as production and marketing of the product. After this research, farmers' participation in sustainable agricultural development in the water and soil conservation of the Royal Project in the highland areas was changed to increase the farmers' participation systematically and appropriate in the operation of the development center by meeting and staging arrangement of farmers for co-worker to brainstorm, exchanging their opinion, finding the solution and decision making, and production planning. As the results, factor bring to the supporting farmers' participation in plant cultivation project on soil and water conservation in the highland area with efficiency and successful came from the overall participation, especially farmers and farmer's group. Even through, in the past, Tin Tok Royal Project Development Center was nicely supported in part of knowledge of the planting from the center also financial support and staffs, but less farmers' participation in the administrative of supporting production that made the center also inefficiency working. Jongvutvait (1994) stated that the participation of community in the world came from 3 concepts. Firstly, personal interesting and concern were changing to their public. Secondly, affliction and unsatisfied together with the situation and push them to aggregation, planning and taking action together. Thirdly, decision together that changing group or community to desire direction. This decision making together must have power enough to making new idea for response to the public opinion in each activity.

Tin Tok Royal Project Development Center as the research source, operating with promotes various plant production such as vegetables, fruits, coffee, mushroom. Farmer in the area of the Tin Tok Royal Project Development Center also has many activities in the same area because of the limitation of the area. Construction and development of farmers' participation in the soil and water conservation system in the highland area of the Royal Project will follow the policy of the center and Royal Project Fund as the majority and will have the undertaker in each activity under controlling by the officer in the department of promotion and development of production. The operation of the promote manufacturing will focus in stakeholder's participation.

Findings of the research create farmers' participation process in sustainable agricultural development in the highland area as mentioned above. The research focused on encouraging the sample group to participate seven activities, included consultation, solution and decision proposal, coordination, operation, caring, benefit, and monitoring and evaluation. The activities consistent with Cohen and Afhoff (cited in Noipha, 1999) that participation can be divided into four parts which are 1) participation in decision-making process includes 3 step as pre-decision, making decision, and decided operation and 2) participation in operation includes resource support, management support, and assistance coordination 3) participation in benefit both in material, social, or individual benefits 4) participation in monitoring and evaluation Techarin (1984) discussed the steps of participation that leads to achieve the objectives and development policy as 1) participation in studying problems in the community, as well as the needs of the community 2) participation in creating model, solution to reduce or solve the problem, as well as to serve the need of community, and 3) participate in policy making, planning, and programming to eliminate the problem and serve the needs of the people 4) participate in co-decision with limited resources to benefit the public 5) participate in eliminate or improve co-management systems to be efficient and effective 6) participation in investment projects in community activities 7) participate in policy, plan, and program, and activity to achieve the goals and 8) participate in control, monitoring, evaluation and caring for the programs activities that made by private and government to be used in long term. Unta (1985) discussed the participation of people in a concrete level that people use

materials, labor, and time in community development. However, in abstract level, participation of people is the guide of their own conception of freedom of their life, feel bound, and responsibility. It can be seen that community participation is the key of the development of any activities related to the community. If people in the community do not feel the ownership and operate the activities, it may not be succeeded. However, if people in community have knowledge and comprehension of the activities actually, as well as be able to expect the benefits of their families and communities, together with adequate information until they aware of the problems of their families and community, then try to solve the problem and participate in group of community. The participation of this kind leads to the actual participation. The decision making process is not only about decision making, yet the process include the operation parallel with decision making also. For example, in organization management, to identify the development plan, the decision making related to population in the benefits and evaluation. The benefits directly affected operations. Moreover, benefits caused evaluation. Both benefits and evaluation stem from decision making according to mentioned steps. In addition, there is feedback of evaluation and operations return to decision also.

In this research, the results showed that the participation action research by using the stage of cooperation meeting for cooperation with brainstorm, recommendation, planning and decision lead the way to the real operation, analysis, monitoring and evaluation together to improve and planning of the promote manufacturing. The results showed that processes and implements could be properly used for the participation action research in plant cultivation project on soil and water conservation in the highland area of the Royal Project. It can be made the each of the Royal Project that systematic and clearly developed and promoted plants by farmers' participation. Chongpronvanith (2002) stated that the participation action research was the related research with people that have co-problem or interest to co-changing by using the co-operation with idea, operation planning, contemplation, decision and moved through learning together.

The study found that key factors for the farmers' participation development to achieve goals are following factors.

1. To take advantage of leading farmers in various areas. To begin with recruiting the leaders will to work with staff. The leaders should feel free to make comments and suggestions, willing to co-operate with the Royal Project Center, being the represent of farmers in collaboration with staff, and being accepted from farmers by the election to create processes of participation. The leaders coordinate between the center and farmers or community. They prior identified the problems of agriculture, such as coffee, vegetables, fruit cultivation, provided basic information about production, problems of production and the cause of the problem, as well as considered the solutions to solve such problems. In addition, they coordinated of the process leading to actual participation with the research team.

2. To study basic agricultural information of farmers by the farmers co-operated in observation with the staffs. For example, in the past cultivation, the obstacles encountered by the manufacturing, participation of identifying solution, as well as presentation of the research team with all the strategies enabled farmers to think in the right direction. They did not stick with the closest solution only. Therefore, the participation process planning focuses on information study to reach the sustainable future of farmers in long term, based on the research during the conference and forum held in the first phase.

3. To plan the problem solving from the participation in studying the information of farmers and the research team. Moreover, they conducted operations according to operational plan of fruit, vegetables, coffee cultivation and natural resource conservation and environment in the highland area. The participation of farmers focused on the need to solve the problems of farmers and staffs as the main point of the operational plan of cultivation. Participation in problems analysis of manufacturing in the past, farmers created activities by identifying people who were coordinators and created the training course, and monitoring the activities with the staffs. Moreover, the problems are solved continuously.

4. The trainings and field trip play significant role in supporting plant cultivation to the achievement. In this research has focused on lectures about production techniques of by fruits, vegetables, and coffee. It emphasizes on caring from first cultivation to harvest. In addition, the training activities were added after the lecture which was field trips. These activities stem from farmers requirements.



The fieldtrip and practice were held at the demonstration area of the center and farmers.

5. Monitoring and evaluation is the main issue in identify problems and obstacles of each farmers operation. They were able to resolve the problems in time. This research divided the activities of monitoring according to type of plant, such as vegetables, fruit, and coffee. The farmers worked with the staffs in monitoring farmers' demonstration area.

6. The participation of the research team, farmers, extension staffs, academics, and persons who involved in developing and promoting of plant cultivation, included coffee, vegetables and fruits. They also cultivated the soil and water conservation plant in the highland area. Bulrush cultivated in prone areas. The participation of all parties helps reduce conflicts arising from the production and marketing in both the present and future.

7. Staffs of Royal Project Development Center in the developing and promoting of production must interest in their responsibility as the promoter, then motivate farmer to learning in the plant production by all steps of the participation process. In addition, they must increase the reliability to farmers in the production and marketing including act as collaborator between Royal Project Development Center and Royal Project Foundation. According the results of Kaewthep (2010), it said that in all steps must have stage and mentor for controlling. It can be said that if it without helper and mentor, villagers would be almost impossible to change from sample to play the role as a researcher. Mentor, who was a part of the management, seemed as a bridge for villagers across to the researcher.

As a result of this research, Royal Project Development Center increased production development by using farmers' participation in each area. Meeting and staging arrangement of farmers increased participation in decision-making process through clearly encourage systematic of farmers' participation. That's systematic appropriated the development administrative and promote manufacturing of Royal Project Development Center. Farmers' participation in soil and water conservation cropping system in the highland could applied this process in other area that both of internal and external of promoting area of Royal Project. However, the policy for

other promoting include authorities depend on the institution that different institute may have different authorities, cultures, and opinions.

The results of farmers' participation in soil and water conservation cropping system in the highland showed that the development administrative and promote manufacturing of Royal Project Development Center increased farmers' participation in order to properly solving the problem of the production and marketing. Royal Project Development Center can specify the direction of administrative work systemically, also the same of the operation of the parties and staff clearly and create the partnership relationship of the development. The implementation will be success if it was supported from internal and external organization including followed the policy of the institution.

The results showed that the farmers of the seven tribes participate in planting activities of the Royal Project Development Center relating consistent with ethnic characteristics, behavior, occupation, culture and tradition each family farmers. The community was all linked to the decision and participation in the activities of various crops. In addition, the comparison of farmers' participation each tribal showed different results. The results of the participation of farmers in growing crops in soil and water conservation in the highland area on the issue of consultation, discussions, the proposed solution and decided, coordination, implementation, maintenance, benefits, monitoring and evaluation in the project plant under soil and water conservation found that urban farmers participated in high level. Farmers Hmong, Lisu, Karen participated in medium level; in contrast, Lahu and Akha tribal farmers' participated in the range of low to medium levels.

According the results, it was found that farmers' participation each tribe associated with external and internal factors, so the development authority should promote and support the learning process participant in the community. However, the role of development authority should supervise and support people in the area rather than action and opportunity of community participated using local knowledge as direction for development. Additionally, brainstorm idea and information should reflect the community development authority and expanding the success through other communities or communities. According the result of Kaewthep (2010), it noted that the method of the expansion issue from the same way was done to the new area which

successfully was depended on the similarities and differences between the same group and new group. If there was similarity more than difference, it may have to be modified. Therefore, an analysis of similarity and difference between the same and new groups should be a prerequisite for expanding into new groups or areas.

### **Suggestions from Research Findings**

1. From the research findings, the benefits of in sustainable agricultural development in the highland area positively related to the participation of sustainable agricultural development in the highland area. It indicated that farmers who have benefited most from agriculture would participate in activities related to agricultural development more than farmers who had little or never had benefit form agriculture development. The suggestions were that the objectives and benefits of the development should be presented to farmers at the first place. The benefit should be widely offered for farmers. It should for be specific for some group of farmers or some farmers who interested in agricultural development. It should be focused on enhancing the farmers thoroughly and fairly.

2. From the research findings, the area holding was positively related to the participation in sustainable agricultural development in the highland area. It indicated that farmers who hole the large area would participate in agricultural activities more than farmers who hold small of none of the area. Therefore, in agricultural development, especially land reform, the government should allocate land to farmers fairly, especially in the highland area, which was limited, or the national park. Most of the farmers are not much proved land. Thus, the development project should be benefited the farmers greatly by increasing production potential to be higher.

3. Participation on agricultural development activities were positively related to the participation in sustainable agricultural development in the highland area. It indicated that farmers who experienced in such activities were likely to regularly participate the activities more than others who less or never participated. Therefore, it is important to stimulate farmers to participate in the activities by promotion of the benefits to themselves, family and community. Encourage them to participate in the first activity, then the nest activities in every step.

4. From the research findings, education was negatively related to the participation in sustainable agricultural development in the highland area. From the field study and experiences of agricultural support found that farmer who had low or non education were likely to participate in activities, especially agricultural activities. They would do follow the staff suggestions in every step. However, in idea expression, they had less expression than others who had higher education. Thus, in the project those require operation treatment more than the advanced techniques should recruiter farmers who suit for the activity in order to increase the effectiveness of agricultural development.

5. From the research findings indicated that the participation of farmers was in the medium to low levels in some issues. The result may due to several reasons both from farmers themselves and the block of participation of the development authorities. Thus, the project should provide the opportunities for farmers to express and participate more, as well as to be kind enough to accept the ideas of farmers.

6. The result showed that participation of the decision of farmers in sustainable agricultural development in the highland area, that soil and water conservation cropping system in the highland area, was low. Thus, even the development should have meeting with farmers or community before action in order to know the objectives and benefits from the development project. Also, people in the community have participation to find the solution and decision in the project that relating with them and staff in the develop department.

7. From the research findings indicated that the participation in monitoring and evaluation of farmers in sustainable agricultural development project in the soil and water conservation system in the highland area of the Royal Project was at low levels. Therefore, agencies should develop training courses to acknowledge the farmers in monitoring and evaluation of the arranged projects in order to lead the farmers to participate in all steps.

8. Development agencies and government authorities should be cooperated and coordinated in policies and plans making on participation of farmers or local people by demonstrating the concrete way, such as short and long term projects, as well as cooperation between the related organizations.

9. The implementation of the participation process of any project of the development authorities would be succeeded by the cooperation and commitment of collaboration between developers or supporters and farmers in the community.

10. The development projects should provide help authority policies of farmers' participation, which emphasized on making community to be a center of development. Local people have to participate in every step of operation.

11. Farmers' participation in sustainable agricultural development in the highland area of the Royal Project and the economical planting in the water and soil conservation of the Royal Project was in the building of the participation, if it was tested or demonstrated in different areas, especially the outcome of optional of the participation process and also have tool for measuring the success, built network of the participation process including internal and external reinforcement such as giving an opportunity, acceptance and awarding. They will motivate the sustainable development continually. Building the farmers' participation in sustainable agricultural development in the highland area will be got the exactly conclusion like general research and development that changing the development until the best results.

12. Farmers' participation in sustainable agricultural development in the highland area of the Royal Project and the economical planting in the water and soil conservation of the Royal Project was the novel activity in the agricultural supporting. This process will motivate the stakeholder in the policy and operating levels that awareness in the activities, then everyone must responsible in the overall operation together including Royal Project Development Center and farmers that were the target of the supporting in the area. Implementation must have meeting continually on order to improvement and solution of the problem in the production and marketing of the agricultural products, then continually evaluation of the performance to increase the success.

13. Promotion of the production by using participatory research action in the Royal Projects of farmers, the officers, agricultural scientists should promote and motivate farmer to be have participation closely and continually since planning stage, all production and marketing stage.

14. The process should be widely promoted to other area.

**Suggestions for further research**

1. To consider the independent variable, it can be described that the variations of the dependent variables was ten variables. Thus, in the further research the independent variables should be.

2. The farmers' participation in sustainable agricultural development in the highland area of the Royal Project should be compared with other area. To find the different social conditions aside from the Royal Project areas.

3. The study of the analysis of monitoring and evaluation of farmers' participation in sustainable agricultural development in the highland area should be done in depth. To find achievement from joint force between the authority and local people in order to use the data to develop in the other areas.

4. Due to this research a study of farmers' participation in sustainable agricultural development in the highland area of the Royal Project in Chiang Mai province. Which does not cover all provinces of the Royal project area? Therefore, the next research further research should be done in every province of the project in order to reach the clearer information.

5. The further qualitative research should be done and cover the population of all ethnics in order to know the differences and similarity among those ethnics and To find the type of people participatory process which it is suit to activities, social and culture for the particular hill tribe.