
PART - II

PILOT PROJECT

EXECUTIVE SUMMARY

1. PLANNING OF PILOT PROJECT

1.1 Background and Objectives of Pilot Project

The objectives of the pilot projects are (1) to analyze and evaluate verification of the M/P and to reflect lessons which have been acquired in the M/P, (2) to implement capacity building about participatory development for communities and officers of related organizations at 7 Tambons in four provinces. The projects were implemented from May 2006 to March 2007.

1.2 Pilot Project Area

Pilot project areas were seven (7) in total, two Tambons in Phayao (Ban Mai and Mae Ka), two Tambons in Phrae (Bor Lek Long and Thung Laeng), two Tambons in Nan (Chom Phra and Yom), and one Tambon in Phitsanulok (Ban Dong).

1.3 Implementation Plan of Pilot Project

The Study consists of three phases such as:

(1) Planning Process of Pilot Project

Pilot project activities were planned linking the CDP formulated by villagers themselves through participatory survey and Program/ Component in draft M/P.

(2) Provision of Learning Process

Key activities of pilot project were provision of learning process such as workshop, study tour, training, small forum of villages or activity groups in accordance with basic concept, which villagers themselves would practice after small trial based on learning in three sector plan.

(3) Implementation Organization and Coordination with Agencies Concerned

Pilot projects were implemented under organic linkage of villagers, ALRO/ ATSAP, TAO, other government agencies concerned as well as local resources such as NGO, learning centers, and so on. As for coordination among government agencies, strategies to deepen coordination with related agencies were exercised after clarifying the role of stakeholders in certain activities.

2. IMPLEMENTATION OF PILOT PROJECT

2.1 Implementation of Activities in Each Pilot Project Area

As shown in the following table, in 6 out of 7 Tambons, more number of activities was implemented than the planned number as some new activities, not included in the original plan, were implemented.

On the other hand, there were some activities in the original plans not implemented.

Province	Phayao		Phrae		Nan		Phitsanulok
Tambon	Ban Mai	Mae Ka	Bor Lek Long	Thung Laeng	Chom Phra	Yom	Ban Dong
Number of Activities (Plan)	18 (15)	21 (16)	29 (25)	26 (25)	0 (15)	23 (15)	21 (19)

2.2 Monitoring and Evaluation of Activities

Monitoring and Evaluation of the pilot project were conducted by participatory approach in accordance with the monitoring guideline. Monitoring and evaluation was conducted through stakeholders meeting (monthly, quarterly, joint meeting of 4 provinces), which included both insiders (local people/villagers/LRAs farmers/ facilitators, TAO, etc.) and outsiders (PLRO, PAO, ALRO/ATSAP, NGO, Study Team). Mid-term and terminal evaluation was conducted in workshops. Since participatory monitoring was considered as a part of learning process, “change” and “new findings” made by insiders’ activities were used as index for the monitoring and evaluation. The evaluation was conducted by means of self-evaluation, in which process of each insider’s learning and change were focused.

3. ANALYSIS AND EVALUATION OF PILOT PROJECT ACTIVITIES

Villagers participated in activities to evaluate pilot project in 4 ratings through terminal evaluation activities.

3.1 Analysis of Successful Activities in Pilot Project

From observation of higher scored activities in

terms of villagers’ rating, the followings were suggested;

- (1) It was suggested that factors affecting success of pilot project activities and better rating by villagers were on input. Input from outside should be little emphasis on knowledge rather than material, and short-term realization of benefit or outcome.
- (2) Because of limited time of pilot project implementation, only 1 year for this Study, immediate benefit is most important aspect to determine villagers’ rating.
- (3) As for activities which have long-term benefit realization and public benefit rather than benefit for individual or household level, it is suggested that villagers ratings depended on how it could be visible to general villagers that benefit from the activities and participation of villagers by implementing activities spreading over physically wide area.
- (4) Besides above factors, many of good rating activities had characteristics of technically easy ones, linkage with other activities or expansion to other areas. They might not necessarily be essential factors to project success, however it is also suggested that activities have such characteristics would most probably be succeeded.

Lessons learned from above analysis to M/P implementation at activity level are as follows;

- To propose potentially highly appreciated activities as “Entry Activities”
- Importance of implementation in wide area with large participation of villagers for activities which has public benefit

3.3 Feedback of Analysis and Lessons Learned from Activities which had Low Rating in Villagers’ Evaluation

From observation of lower scored activities in terms of villagers’ rating, negative factors affected to evaluation were analyzed as follows;

- (1) Activities failed or outcome with less-than expected due to poor learning opportunities
- (2) Inputs for activities were not enough or unavailable in local area
- (3) Activities which had limited extent of practice and expansion
- (4) Misunderstanding and different motivation of participants
- (5) Disempowerment due to non-supportive attitude of community members

Lessons learned and items to be fed back to M/P from above fact analysis and countermeasures areas follows;

- At stage of formulation of CDP and selection of activities, objective and methodology of activities should be fully discussed in detail among stakeholders to confirm consistency with overall goal and basic concept of M/P. Recruitment of participants to each activities based on such consensus would make it possible to avoid misunderstanding of participants in process of activities.
- It is necessary to utilize local resource persons who have enough practice and experience in order to secure quality as well as quantity of learning opportunities. Existing local resources and newly developed local resources through activities would be effectively developed as learning center.
- Facilitators should have enough information of local resources and be capable to coordinate with them. For M/P implementation, it is proposed that existing directory of local resources would be utilized and expanded, facilitators would be trained and opportunities to exchange information periodically would be systemized.
- Inventory and monitoring of local resources, which can be utilized in activities, shall be conducted.
- Behavior of risk evasion hamper emergence of practitioners. It is proposed that necessary investment cost should be granted to pilot activities to reduce risk to villagers for failure and create forum to exchange workshop/ forum to exchange, share and feed back the results of piloting.
- It is necessary to provide moral support to innovators aside from financial and technical support.

4. EVALUATION OF PILOT PROJECT AND VERIFICATION OF M/P

4.1 Methodology for Analysis of Evaluation of Pilot Project and Verification of M/P

Evaluation of pilot project and verification of draft M/P were analyzed in three major aspects.

(1) Process and Participation Evaluation

Process of participatory planning, learning process and small pilot practice were evaluated and "Effectiveness of Concept", "Planning Method", and "Monitoring Method" of M/P were verified. Since participatory approach was anticipated in all steps of the process, actual participation, mechanism for participation and its results were assessed.

(2) Capacity Assessment of Stakeholders

Current capacity of agencies concerned, which were supporters of activity process, and local resources, were assessed. "Implementation organization" and "Networking" of M/P were verified.

(3) Evaluation of Outcomes/ results of Activities

Activities were evaluated in 5 aspects (relevance, effectiveness, efficiency, impact and sustainability). "Effectiveness of Program/ component/ activities" was verified based on the evaluation.

4.2 Evaluation on Process and Participation

Process of pilot activities was broken down into "Participatory Survey and planning", "Proposal of Activities and Implementation", "learning opportunities and small trial" and "Practice and Extension". Results of analysis and evaluation are summarized as follows;

- "Provision of learning opportunities" and "Use of local resources" were important factors to make activities progress by providing knowledge and skills meet the needs of villagers.
- Flexible learning process based on actual condition of locality can facilitate villager's initiatives and capacity to solve problems. It would be resulted in "Self-reliance"
- Participatory monitoring and evaluation activities might foster empowerment.
- Participatory planning which has flexibility would give initiative to people and resulted in sustainability.

4.3 Capacity Assessment of Stakeholders

Through implementation of Pilot Project, capacity of stakeholders such as ALRO, ATSAP, PLRO, government agencies at provincial level, TAO, local resources groups and facilitator were assessed in view of required capacity to implement M/P in future. It can be summarized as follows;

- ALRO central might face resource conflict in case of without fulltime staff. It would have problem in coordination with PLROs, monitoring and budget execution. Special unit for M/P implementation with full time staffs is recommended.

- ATSAP would coordinate at policy and central level to promote sustainable agriculture. Current policy on establishment of “Learning Centers for Sufficiency Economy” should be applied to M/P areas.
- PLROs also need to employ fulltime staffs for M/P implementation.
- Coordination among TAOs and MONRE shall be continued.
- Facilitators are essential to M/P implementation. Local NGOs are recommended to play this role.
- Networking is being formulated among activities groups and individuals in some of pilot activities and play role in extension and exchange of knowledge. It is expected that sustainability of pilot activities are assured by networking. Networks are utilized as local resources in development of activities.

4.4 Evaluation on Outcomes and Verification of M/P

Through the pilot projects, effectiveness of learning/trials/practice processes under the supports from government organization, related organization and local human resource, and validities of programs/components/ activities which are formulated in order to achieve the goals of “Natural resources in and around LRAs are conserved” and “Local people become self-reliant”, was examined.

(1) Natural Resources Management Plan

Natural resources management plan consists of 10 components in 4 programs. In Pilot Project, the all components/activities were planned or implemented. The outcomes of each component/program with reference to objective of program are summarized as follows;

Forest Produce Utilization Program

(Main activities in Pilot Project : herb harvesting, medical plants)

Objective ; Forest produce is utilized sustainable. Livelihood is improved. Awareness on forest conservation is created.

Having learned indigenous knowledge about kind and utility of valuable species/medicinal herbs, villagers harvested these forest resources, in addition to bamboo shoot and mushroom that have been commonly harvested. Simple input through provision of knowledge only leads to immediate outcome, making positive and direct impact on reduction of household expenditure and increase in income through additional income generation, which would lead to expansion of the activities. As having been observed in a case that villagers came to prepare local tree seedling by themselves, there is possibility for conservation of natural resources by knowing their value and intention of sustainable use of them. However, without establishment of regulations for sustainable use, it could cause forest exploitation.

Forest Resources Management

(enhancement of capacity of community forest committee, making regulations, forest survey to identify valuable species/resource and information dissemination)

Objective ; Forest resource, including community forest is managed properly.

There exist community forest in each area with community forest committee; some are registered by MONRE while others are unregistered.

In Pilot Project, on the job training for existing community forest committee and formulation of regulation with people's initiative were conducted through learning from good practice in other areas as well as other related activities. In Phitsanulok province, formulation of action plan, budget allocation

from TAO and corroboration with local schools and outside network has been achieved. It was confirmed interventions from outside worked effectively to a certain extent for capacity building of community forest committee and collaboration with related organizations, which were required for successful management of community forest by villagers.

Forest survey for identification of valuable species/resource was conducted in all areas, providing opportunity for the participants to recognize richness in variety of forest resources and its value. Based on the result of the survey, information and knowledge was disseminated widely with people's initiative, which created awareness on forest conservation as well as new activities.

Forest Rehabilitation Program

(reforestation, making fire break, putting boundary markers)

Objective ; Reserved forest zone is clearly delineated and deteriorated forests are rehabilitated.

It is widely known that activities for preventing fire and stopping loss of community forest have positive impacts as reduction of actual number of fire in community forest. Furthermore, villagers also confirmed increase in number of animals and plants in forest as indirect and immediate outcome. On the other hand, being supported by ALRO and MONRE with provision of seedling, reforestation activity was implemented by a lot of participants from communities. It contributed to awareness raising of people about forest conservation.

On the other hand, it was also found putting boundary markers for showing the boundary of community forest resulted in decrease of encroachments to reserved area. Since these activities have certain outcome and also have received high evaluation marks from villagers, it is recommended to put boundary markers in all reserved areas.

Natural Resource (soil and water resource) Conservation Program.

(soil conservation, construction of small-scale check dams/weirs)

Objective ; Soil and water in forest and cultivated area are conserved.

Activity of making bio-fertilizer/compost was implemented in all 4 provinces. Farmers who made trial on utilization of such natural fertilizer found successful outcome such as decreased cost for agricultural investment, increased production and improvement in soil fertilization, rating the activity with high grade. In one province, the successful outcome in trial stage led to expansion of the number of farmers who practiced it. While having outcome in short-term includes reduction of agricultural production cost and improvement of productivity, reduction of soil erosion through soil improvement is also expected if the activity is further expanded. In Pilot Project, activity that directly led to prevention soil erosion was not implemented.

In some part of reserved forest area, in cooperation with MONRE, small-scale check dams/weirs were constructed with participation of a large number of villagers. This activity was appreciated since it contributed to increasing water quantity in dry season and had positive impact on biodiversity.

As can be clearly seen in the above component evaluation, each activity was implemented in accordance with its objective. Even within relatively short-term, expected outcomes were observed generally. As to activity of putting boundary markers showing border of reserved forest, while normally this activity should belong to government responsibility, it was able to be implemented only with people's participation and commitment. Once starting to go on well, people-led activities in community forest like this example could be sustainable without support from outside. Effectiveness of those activities has been verified as what lead to goal of 'conservation of natural resources in and around LRAs' in longer term. Yet, activity in soil conservation component, especially promotion of activity for preventing soil erosion, remains an issue to be reconsidered.

The following is a list of findings in a process of pilot project. They should be reflected into a process

of components/activities in future to accomplish objectives successfully.

- Recognition of utility of natural resources helps villagers notice importance of proper use and management of community forest and find linkage between issues of agriculture and livelihood, promoting their motivation to the activities.
- Study tour to advanced community and learning from indigenous knowledge are effective for the purpose of promoting utilization and conservation of community forest.
- Objectives of each program, benefit for whole areas, can be attained by collective activity of villagers. Villagers enjoyed and appreciated such activity with a lot of participants as one of local events. For attaining objectives, it is indispensable to implement such collective activities of villagers in coordination with agencies concerned.
- Combination of traditional culture ceremony or local belief for animism with activity enable to raise awareness for conservation based on local traditional norm about utilization and conservation of natural resources in daily life and agriculture, which leads to joint activity of villagers.
- Capacity building of community forest committee leads to sustainability of people-led activity for conservation and management as well as utilization of community forest.

(2) Livelihood Improvement Plan

The plan consists of 4 programs and 8 components. In Pilot Project, activities in 5 components were implemented. Main activities included self-dependency of farmers through reduction of debt by reducing expenditure at household level, while others include activities for improvement of rural life in general such as healthy and safe living, non-agriculture income generation, and re-evaluation of traditional culture and indigenous knowledge.

The outcomes of each implemented components/activities are summarized as follows;

Livelihood Improvement Program

(making daily commodities, charcoal making, bio-gas, bio-diesel)

Objective ; Livelihood of household is improved through income increase and reduction of expenditure.

Review of household expenditure made the participants review their consumption activity. Self-making of daily commodities such as detergent, soap and shampoo proved to contribute to expenditure reduction by 100-200 baht /month.

In terms of activity for energy saving, trial on producing bio-gas and bio-diesel generated from excreta of swine as alternative energy for cooking was implemented. According to farmers who conducted trial, it was proved utilization of bio-gas led to reduction of expense for propane gas by 300 baht/month. As for bio-diesel, it was found production cost of bio-diesel is just 0.5 baht/liter, while that of ordinary diesel is 4.5baht/liter. Yet, bio-diesel was not extended further due to limitation of quantity of material (used cooking oil). Charcoal making was not continued due to problems in material and quality.

As to non-agricultural income generation activity, in spite of existence of activities as possible income source such as weaving, this component was not selected by villagers, because there were such challenges as improvement of product quality and finding market opportunity, which would not be solved in short-term.

<p><u>Fund Development Program</u> (Establishment of community bank) <i>Objective ; Community bank is established.</i> Saving groups, informal fund like funeral group and credit scheme under government policy such as one million village fund existed in every project site. However, this component was implemented only in one province. In spite of efforts on information collection and a series of discussion, establishment of community bank by combining existing groups together was not realized (later, policy related Village Fund and community bank, a policy of the former government, was abolished)</p>
<p><u>Health and Welfare Improvement Program</u> (blood test for chemical residual effect, local doctor, inheritance of indigenous knowledge and traditional culture) <i>Objective ; Health and welfare of villagers are improved.</i> Activities for reevaluating utility of locally available herbs and folk remedy through ‘local doctor’ as well as blood test in an area with high cancer incidence for the purpose of checking chemical residual effect were conducted. Based on recognition of health damage caused by pesticide, which was revealed by the blood test, the former activity was used to suggest utilization of local resource (herbs) as remedy. Through this process, awareness was also raised in terms of safe food and organic agriculture. At the same time, indigenous knowledge of local doctor or elderly on herbs and remedy was utilized and reevaluated. “Ceremony for animism of head water source protection” and “Ordination of trees” for forest conservation enabled participation of villagers in a large scale, which led to awareness raising on natural resource conservation. This case showed that traditional culture or local belief, which tend to be seen as nothing to do with the development project, play important role in promoting community participation.</p>
<p><u>Infrastructure Development Program</u> (garbage disposal) <i>Objective ; Rural infrastructure is improved.</i> Although waste disposal was suggested in CDP formulation stage by villagers, it was not implemented except for a case that it was implemented within plan of TAO. It was an outcome that suggestion in CDP was taken into a plan of local government.</p>

As can be seen in the above summary, it was confirmed every activity led directly to improvement of life and livelihoods of villagers. In Pilot Project, outcomes in short term were confirmed in most activities. In terms of activity of making daily commodity, which is able to be conducted under villagers’ initiative, the outcome and future direction for extension and expansion were confirmed within project period. On the other hand, as for such activities as non-agricultural income generation (not implemented), which need to concern further issues like marketing and trading, as well as establish of community fund, which need long time to see the outcome, intervention and action was quite limited in Pilot Project. In terms of components that are considered difficult to be conducted only with people’s initiative, it may be one of the options to link with specific government program, though careful attention should be paid to consistency of government policy. As stated above, though outcomes attained only by activities of villagers within framework of M/P are limited, they can be further extended and expanded toward a goal of self-reliance of the area by continuous implementation by local related agencies or other programs.

The following is a list of issues revealed in implementation process of Pilot Project, which need to be reflected into process of activities in M/P.

- For the purpose of reduction of household expenditure, activities related to daily expenditure with immediate outcome, self-making of daily commodities for instance, are effective and easier to draw interest and motivation of women.
- It is a key factor for continuity and expansion of activities that existing women's groups play leading role in activities for improvement of life and livelihood and find 'happiness' in experience of working together.
- Though activity of bio-gas and bio-diesel need equipment for production, they can be tried and practiced enough with technical level of villagers. Even rural infrastructure construction, it is possible for villagers to implement by themselves in terms of small-scale infrastructure.
- Activities for handing down and utilizing indigenous knowledge of elderly or local traditional doctors are effective for keeping good health.
- Recognition of chemical residual effect by blood test can be utilized as an opportunity for farmers to start paying attention to safe food as well as chemical-free and organic farming.

(3) Sustainable Agriculture Development Plan

Among 5 programs and 11 components in this sector planned in M/P, 7 components were implemented in Pilot Project.

Main activities of the sector are those related to increasing or stabilizing farm income for attaining self-reliance. As solutions to such issues as high agricultural production cost for fertilizer or pesticide, necessity for stabilizing income through mix-cropping and diversification, and soil deterioration due to continuous and mono cropping of cash crop, activities such as reduction of production cost for agricultural inputs or livestock feeding, introduction of integrated farming, and soil improvement by bio-fertilizer utilizing IMO were implemented. With reference to objective of program the outcome of implemented component/activities are summarized as follows;

Agricultural Production Development Program

(kitchen garden, mushroom cultivation for household consumption, introduction of double-cropping, farming with less chemical use, integrated agriculture and farming techniques for soil protection)

Objective ; Agricultural production is increased through extension of farming method utilizing local resources

Through utilization of bio-fertilizer with IMO and alternative natural pesticide in paddy and vegetable cultivation, reduction of production cost up to 4,000 baht as well as income increase up to 22,000 baht caused by improved productivity were confirmed by the trial. Yet, it still remains at self-sufficient level. Integrated farming was introduced on trial by about 20 farmers in each of three provinces except for Nan, where diversification had been already introduced. In Pilot project, mainly it was conducted by combination of crop diversification in farming plot around house and livestock raising. While outcomes such as ensured supply of safe food and reduction of household expenditure were confirmed, it was pointed out it also caused increase in labor input.

Livestock Development Program

(fish raising, frog raising, swine raising, native chicken raising, cattle raising, and feed production)

Objective ; Livestock raising is promoted through improvement of feeding technique and feed production.

As to feeding for middle-size or big livestock, such activities as shift from purchased feeding to

self-made feeding, reduction of bad odor, IMO fertilizer and fermented bed for cost cutting were implemented as trial by existing livestock farmers. In addition to reduction of cost, effectiveness in mitigation of outside shock such as downward trend of produce price through bio-gas, bio-fertilizer, processing and selling of livestock produce was also confirmed.

On the other hand, activities related to small size livestock (fish, frog, chicken, etc.) were conducted in small-scale at self-sufficient level. However, introduction of technique for chicken raising in Nan province led to additional income from selling eggs in the area. In Phayao, frog-raising activity, being sold expensive, was given high evaluation rating. As can be seen these cases, it is clear that additional income becomes good incentive for farmers.

In Phitsanulok province, where grazing in forest remained in a part as local habit, pasture and feed development enabled to prevent the encroachment.

Farm Produce Processing Program

(processing of vegetable/fruits, bamboo shoot, herbs, and meat, fish sauce)

Objective ; Locally produced agricultural and livestock products are processed and sold.

Although bamboo shoot processing was introduced with an intention to sell at markets, it was cancelled in all provinces because of food poisoning case in outside area.

Activities in this component such as fruits juice and fish source making in Phayao and sausage making in Phrae, which were conducted by women's groups, were intended mainly for consumption at household or community level, not having intention of generating additional income. However, these activities were appreciated by the participants in terms of supply of safe food and expenditure reduction. In Phrae, as countermeasure to decrease in producer price of pork, farmers' group slaughtered swine by themselves and sold them in community to ensure benefit from swine meat.

Marketing Program

(community market, marketing improvement of chili)

Objective ; Distribution of agricultural produce is improved and distribution margin is reduced.

Though activity related to community market was planned in Phrae and Nan province, no concrete activities were conducted. Activity for marketing improvement of chili was also not implemented because producer price of chili was relatively high in that season.

While these implemented activities should lead to stabilization of income by diversification of income source and additional income in future, not the all expected outcomes were confirmed within short period because they mainly remained within improvement of existing agricultural activity and at household/community consumption level. Especially for soil protection, it was impossible to verify impact of application to wide area with soil erosion problem which cultivate cash crops such as maize due to time and financial limitation as well as farmers' fear for taking risk. However, implemented components/activities proved it possible to improve productivity and quality of agricultural produce, reducing production cost at the same time by utilizing material easily found in their surroundings without dependency on large-scale input from outside. As can be seen in today's extension and expansion of activities, it was of activities, it was verified conversion to sustainable agriculture is feasible and that will surely contributes to achievement of goal, i.e. improvement of livelihood of rural household through sustainable agriculture.

The following is a list of issues revealed in implementation process of Pilot Project, which need to be reflected into process of activities in M/P.

- Utilization of progressive farmers as learning center can help learning process of farmers

effectively, in which they make trial and practice based on newly gained knowledge.

- It is possible to improve productivity and quality of agricultural produce, while reducing production cost at the same time, through organic farming with locally available materials.
- Integrated agriculture and kitchen garden contribute to reduction of household expenditure and ensured supply of safe food. Furthermore, selling the surplus in community leads to additional cash income, which can be good incentives for villagers.
- In quite a short period of Pilot Project (about 1 year), integrated farming as practice of sustainable agriculture as well as activity of community market for agricultural produce were not introduced. In order to step forward to trial and practice of these activities, support for longer-term learning process, such as study tour and learning there will be required.

(4) Challenges to be Addressed for Ensuring Sustainability of Activities

Through a process of verification of components/activities, the following issues were clarified as challenges to be addressed for ensuring sustainability. They need to be taken into consideration in planning/implementation stage of components/activities.

Natural Resources Conservation

- While putting boundary marker of reserved forest is indispensable activity, it was implemented in only a part of Pilot Project area. It is necessary to be incorporated into budget plan of MONRE, TAO, or ALRO in future.
- Although construction of small-scale check-dam in reserved forest area was enabled by admission of site staff of MONRE, who understood significance of the activity, it was not allowed by law. In order to enable expansion of this kind of activity, amendment of regulations or system is necessary.
- Without proper regulation, utilization of resources in community forest could cause overexploitation and deterioration of forest resource. Community forest committee and other stakeholders should be responsible for monitoring resource utilization.
- While MONRE or ALRO provided seedling for reforestation activity in Pilot Project, it is recommended seedling of valuable species should be prepared by villagers in future.
- Construction and improvement of check-dam as well as making firebreak, which need to be conducted annually, requires budget allocation in plan of Tambon.
- Farming techniques for preventing soil erosion requires support from LDD, NGOs with experiences in this field, and research institutes, etc.

Livelihood Improvement

- As new source of non-agricultural income generation, traditional handicraft, processed forest produce and homemade daily commodities are considered, but it requires expansion of market opportunities and quality improvement to make them really lead to income increase.
- While reduction of household expenditure contributes not to have additional debt, stabilization of agricultural income through reduction of production cost has much more impact on household

finance. Yet, for repayment of debt, income increase is essential.

- Activities for health promotion and nutrition improvement included in health and welfare program require cooperation of regional health center and support from TAO. Local indigenous knowledge such as folk remedy by local doctor (i.e. utilization of herbs) must be handed over to next generation.

Sustainable Agriculture Development

- Since progressive activity in agriculture is often accompanied by risk, the number of farmers who put the learning into practice tends to be limited. Extension and expansion need long time, but it is important to support trial of progressive farmers to make successful model.
- From experience of gaining conventional support from government agencies, villagers organize activity groups often with expectation for obtaining inputs (material, young fish, chick, etc.) from outside for free. In that case, the activity is not sustainable because, not having sense of ownership, they are not willing to continue the activity without support from outside.
- Having increased productivity as an outcome, soil improvement through making compost tends to be appreciated by villagers. On the other hand, it is difficult to introduce activity for prevention of soil erosion because negative impact by soil erosion has not been recognized by villagers at present.
- Villagers tend to show quick response to specific techniques for agricultural production, it is rather difficult for them to understand or analyze such issues as overall farm management, linkage among various activities within regional farming, and resources recycling.
- As for activity of marketing program, it is recommended to start from community market.

5. LESSONS LEARNED FROM PILOT PROJECT AND FEEDBACK TO M/P

5.1 Process and Participation Evaluation and Feedback to M/P

(1) Flexible Learning Process

Lessons learned

Activities for construction of small scale check dams/ weirs and bio-gas generation were created through ‘awareness’ in the learning process and study tours. Considering that local people grow ownership sense and motivation, learning opportunity should be designed flexibly based on the local conditions of project sites and people’s needs. A flexible learning opportunity can make people’s activities more efficient, which may lead sustainability of activities. Through these processes, local people become self-reliant.

Suggestion to M/P

- In the project implementation, it is required to provide learning opportunities based on the conditions of project sites and people’s development sense. Activity process should be designed flexibly on local needs.

(2) Issues in Site Selection

Lessons learned

Non- or less-implementation of activity plan were reported. This was because basic concept of pilot project such as learning process, self-reliance and making of local resources was not fully understood by villagers and Tambon staffs. Lessons learned from this experience suggest necessity of project staff training to have common and clear understanding of concept, approach and objectives of the project using real situation cases. When site is selected, it is essential to obtain prior consent from villagers and Tambon staff on concept and approach which would apply to throughout project implementation.

Suggestion into M/P

- Project field staffs, i.e. PLRO staffs and coordinators, shall be trained before entering the site selection. Outside resources might be needed to assist and train PLRO and field staffs.
- Site selection process shall include training and study tour order to have clear understanding of M/P (Study tour to the pilot project sites, introduction of pilot project activities by showing visual record)

(3) Participatory Monitoring and Evaluation

Lessons learned

In the participatory monitoring, “changes and new findings”, “gaining knowledge” and “happiness” through activities were used as indicator which could be adapted by villagers. It was necessary to explain again and again to villagers meaning and importance of monitoring.

Suggestion to M/P

- Common understanding on monitoring purpose and method should be cultivated among villagers and facilitators before activity is practiced.

5.2 Capacity Assessment of Stakeholders and Feedback to M/P

(1) Coordination with Agencies Concerned

Lessons learned

In the pilot project implementation, coordination with MONRE (MONRE), DOF, DOI and universities were observed even degree were varied from Province to Province. Most of the cases were provision of learning opportunities. Especially, cooperation works with MONRE is essential for wider forest area conservation. Although LRAs are not under the control of MONRE, MONRE should recognize that natural resources management activities in LRAs are linked with wider forest area conservation since the LRAs are adjacent to conservation forest and living people coexist with forest as frontline of forest conservation and management.

Suggestion to M/P

- Coordination with agencies concerned should be established to secure sustainability of M/P operation. ALRO/PLRO should provide coordination system in Public relation on M/P, Encouragement of participation in related seminar and workshop, and demonstration in the pilot projects.

(2) Implementation Organization

Lessons learned

Through the implementation, it is verified that the coordinator plays key role in facilitation and coordination between villagers and stakeholders. Therefore, it is necessary to train and build-up capacity of facilitator at early stage of the M/P implementation. It would bring more effective M/P operation and its results.

PLRO is the key organization in management of M/P operation and coordination with other agencies concerned at provincial level and TAO. However, existing human resources of PLRO might become constraint in future M/P operation due to limited personnel who engages in rural development. Moreover, consistency of M/P operation would be disturbed by regular alteration of personnel, which is common in government offices and experienced during the study period. Thus, it is recommended to have full-time governmental staff for M/P operation as Project Management Unit (PMU), otherwise employ consultant team or other outside resources to assist PLRO continuously.

Suggestion to M/P

- For smooth and effective implementation of M/P of which its scale is larger than the pilot project, implementation organization consisted of full-time project staffs, such as Project Management Unit (PMU), shall be organized.
- For smooth and effective implementation, facilitator should be allocated.
- Allocated project staff and facilitators should be trained in the course of the project implementation.

(3) Capacity Building of Farmer Leaders

Lessons learned

In order to achieve sustainability, farmer leaders, group leaders and potential youths shall be trained to be facilitator of various village level activities. During the pilot project, training for leaders was provided, but it was not enough to develop their capacity. In the course of project implementation of the M/P, training program should be implemented for farmer leaders, group leaders and potential youths as field workers and take part in implementation organization.

Suggestion to M/P

- In the course of project implementation of the M/P, training of trainers (TOT) should be implemented for farmer leaders, group leaders and potential youths. Trained persons should be

incorporated into the project implementation organization as field worker.

5.3 Evaluation of Outcomes/ Results of Activities and Feedback into M/P

(1) Natural Resources Management

Lessons learned

1) There are required collective activities to be led by local people and community.

Considering the results of the activities conducted, those of natural resources management plan are considered to be public ones from which whole community members can get benefit, although those of sustainable agriculture development and livelihood improvement plans are considered to be a choice in individual or household level. It was learned that the activities for natural resources management and conservation can be considered to require collective activities by local people and community.

2) Collective activities can be created from ‘awareness’.

Collective activities brought from the ‘awareness’ linked with their daily farming activities could be easily expanded into the related communities. It can be said that activities which local people are aware of conservation and management can be established in their community.

3) Cooperation with MONRE, TAO, activity leader and local people is required to promote the collective activities.

Formal or informal leader in the community act as an interface between the administration such as PLRO, MONRE, TAO and villagers. It is required to cooperate with MONRE and related organizations at the time when the collective activities are materialized in the sites. Timing and scale of the inputs/ supports should be arranged prior to concrete actions. Especially, in the sites where are in the conflict of conservation forest boundary, MONRE should intervene between them.

4) Collective activities can be sustained through incorporation with Tambon Plan.

The activities, such as construction of water conservation check dams/ weirs and setting of fire break line, are considered to be regular annual activities led by local people. These activities are required to continue regularly. In the pilot projects, those activities were materialized through financial supports from the Tambons and many people participations. Considering the activity process, it is considered that the collective activities can be incorporated into annual plan of the Tambon.

5) Incentive mechanism should be given to farmers for promotion of the activity ‘soil erosion prevention farming’.

The activity of ‘soil erosion prevention farming’ could not be materialized in the farm land, since it could not be motivated for farmers. Local people might hesitate to apply the activity in their farm

since benefit from which activity can be obtained, is not clear. In order to promote soil erosion prevention farming, motivation should be given to farmers. It is obvious to understand that activities for which farmers conserve and manage in their land may lead to their benefit. LDD and related organizations should cope with this subject, and prepare the activity design based on the motivation.

6) Collective activities grown from ‘awareness’ shall be expanded into other communities through repeat of study tour and learning.

‘Awareness’ can be grown and expanded into other people through learning and exchange of opinion at the advanced communities.

Suggestion to M/P

- There are required collective activities which whole community member should cope with in natural resources management plan.
- In the M/P implementation, entry activities which may grow ‘awareness’ should be found.
- Formal or informal leaders should be trained and educated in the course of the project implementation.
- Continuation of the activities may be incorporated into Tambon’s annual plan.
- Cooperation with LDD should be required in the ‘soil erosion prevention farming’.
- Learning opportunity found in the pilot project should be utilized in the project implementation stage.

(2) Livelihood Improvement

Lessons Learned

1) Activities for expenditure cutting are practical.

It is common that new income generation activities are unstable at the beginning. Through the pilot projects, it was learned that unnecessary expenditure cutting was very effective for livelihood improvement, and production of daily commodities was practiced. As this activity, which was widely expanded to other areas without any difficulties, proved clearly, it was a very practical activity.

2) Whether people feel happiness with an activity is a key factor for continuity of the activity.

It is a key factor for continuity of an activity whether those who participate in the activity feel “happiness” or not. In cases of two activities, production of daily commodities and kitchen garden, people felt happy and solidarity through getting knowledge and practices. This indicates that feeling happiness is a vital factor for continuity and expansion of group activities.

3) Practitioners can be resource persons for activity expansion.

As the activities of production of daily commodities and bio-gas produce demonstrated, those who participated in activities can be resource persons for workshops and/or training in other areas to share

their experiences with other people and expand their knowledge to others.

Suggestion to M/P

- To implement the Master Programs, the expenditure cutting activity can be an entry point.
- To implement the Master Programs, it is important to hold periodical meetings where groups learn their own experiences each other.
- Doers work as resource persons to expand fruitful results.

(3) Sustainable Agriculture Development

Lessons Learned

1) Learning with familiar samples is necessary to understand, try and practice sustainable agricultural farming.

People understood that low cost agricultural production system utilizing locally available materials is effective to stable household income through the pilot projects. However, it is not easy to change the conventional agricultural production system, which needs many resources from outside. To realize sustainable agricultural production system, familiar and successful examples and long-term learning processes are necessary.

2) Organic farming is a good entry point for sustainable agriculture development,

Through the pilot projects, it was difficult for people to fully understand the concepts of sustainable agricultural production system, but organic farming was understood and practiced. For instance, organic crop production (rice and maize) and organic swine production were practiced, and production cost comparisons of organic one and conventional systems indicated benefits of organic systems. Because they are still at trial stages, more cropping seasons and/or periods are necessary to have firm results and establishment of organic production systems.

3) Locally available networks are effective to learn sustainable agriculture.

Instead of governmental organizations and staff, locally available networks such as advanced farmers, universities/colleges, are effective for people to learn sustainable agriculture, as the case of organic farming activity proved. These locally available networks are operative for people even if this Study be terminated.

4) To realize marketing activities, long-term learning processes and follow-up activities are necessary.

Because it is rather difficult for people to get new marketing channels outside their own communities, a component of community market development was proposed, and learning processes were provided. Since any activities were not done during the pilot project period, it is necessary to provide learning opportunities for a long term and careful follow-up activities until the components are realized.

Suggestion to M/P

- Learning centers and model farms, which exhibit sustainable agriculture, should be established.
- Organic farming can be an entry activity for sustainable agriculture development.
- Learning centers, which were effective during the pilot project period, should be continuously utilized.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The objectives of the pilot projects are (1) to analyze and evaluate verification of the M/P and to reflect lessons which are acquired in the M/P, (2) to implement capacity building about participatory development for communities and officers of related organizations at 7 Tambons in four provinces. The projects were implemented from May 2006 to March 2007.

Following the concept of the M/P, process of learning/implementation of people was emphasized when pilot projects were implemented, in order to achieve objectives. M/P was verified from a point of view of activity process, participation, capacity evaluation of stakeholders, achievement evaluation of activities. Consequently, practicability and effectiveness of the M/P was verified. Implemented components/activities were analyzed. Effectiveness of some components/activities was confirmed. Meanwhile, effectiveness of some components was not confirmed in the short period of time. However, people thought that if people had continued and developed the activities, the objectives of the activities could be achieved. Thus, effectiveness of program/component was verified.

During the implementation process of the pilot projects, it was clarified that people can plan and implement an activity, if necessary resource and funding are provided.

6.2 Recommendation

Lessons obtained from the pilot project implementation are summarized as recommendations for Chapter 6 (Master Program Implementation Plan) of the Final Report (Part-I: Master Program). They are as follows;

(1) Recommendations for “6.2 M/P Implementation method”

- There are required activities to achieve the natural resources management in and around the LRAs. When it is implemented, first, it is recommended to encourage people’s “awareness”, then, it is recommended to use that to connect the required activities.
- As a realistic activity for livelihood improvement of house holds, it is recommended to start “Organic agriculture ” and “Making daily commodities” as an entry activity, because it is effective. It is recommended to stabilize incomes from agriculture activities through “integrated farming” in a long period of time. It is required to integrate a learning opportunity in a long term and supports into the activity plan.

- It is important to pay attention to people's "awareness" and "motivation" when activities are planned and implemented.
- When components/activities are continued/promoted/expanded, participants need to feel "Happiness". That is very important.
- "Awareness" will be fostered through demonstration and/or exchange and sharing of on-going activities. Thus, it is recommended to utilize forum for learning formulated and developed in the Pilot Project for further expansion of program/ activities.
- "Learning Process" should be planned flexibly according to situation of target area.
- Prior to finalize implementation area selection, stakeholders, especially formal and informal leaders at Tambon level, shall have common understanding and consensus on concept and approach to implement M/P.

(2) Recommendations for "6.3 Role of Stakeholders for M/P Implementation"

- Activities in Natural Resources Management Plan shall be implemented under cooperation among villagers, agencies concerned, TAOs and NGOs.
- TAOs are recommended to include such activities needs yearly implementation e.g., small check damr construction and maintenance, fire break making, and etc., in annual Tambon plan, so as to secure budget to support collective activities with villagers.
- It is recommended that MONRE and PLRO shall cooperate in providing necessary support for planning and implementation of activities by villagers on "Reserve Forest Area Delineation", "Community Forest Management", and "Reforestation", which include confirmation of boundary of conservation forest at site, provision of seedlings for reforestation, and permission of activities in Conservation Forest, among others.
- LDD and other agencies concerned shall provide applicable farming technology and appropriate learning opportunities for farmers to learn soil conservation and farming technology to prevent soil erosion.
- Leaders in villages, communities and TAO shall play facilitating role to encourage villagers to participate and promote activities.
- ATSAP and ALRO shall support to develop learning centers and demonstration farms in order to promote sustainable agriculture development.

(3) Recommendations for "6.4 Project Implementation Plan of the M/P"

- In case that scale of project would be larger than the Pilot Project, it is recommended to set up Project Management Unit as project organization separating from ordinary organization of ALRO with full time staffs.
- In order to implement M/P smoothly, facilitators shall be employed in each province. For facilitation of activities at community level, field workers who support facilitators shall be recruited for each Tambon.
- Human resource development or training of PMU staffs, facilitators and field workers shall be implemented throughout process of M/P implementation.

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Abbreviation

ALRO	Agricultural Land Reform Office, MOAC	MONRE	Ministry of Natural Resources and Environment
ATSAP	Agricultural Technology and Sustainable Agriculture Policy Division, OPS, MOAC	M/P	Master Program
		NRD2C	National Rural Database
C/P	Counterpart	NGOs	Non Governmental Organizations
DOAE	Department of Agricultural Extension	OPS	Office of the Permanent Secretary, MOAC
DOCP	Department of Cooperative Promotion	PAO	Provincial Administration Office
DOL	Department of Livestock	PLRO	Provincial Land Reform Office
JICA	Japan International Cooperation Agency	PP	Pilot Project
LDD	Land Development Department	RFD	Royal Forestry Department, MONRE
LRAs	Land Reform Areas	TAO	Tambon Administration Organization
MOAC	Ministry of Agriculture and Cooperatives	TTC	Technical Transfer Center

~ Provinces ~

CRI:	Chiang Rai	PYO:	Phayao	LPG:	Lampang
LPN:	Lamphun	CMI:	Chiang Mai	MSN:	Mae Hong Son
TKK:	Tak	KPT:	Kamphaeng Phet	STI:	Sukhothai
PRE:	Phrae	ANN:	Nan	UTT:	Uttaradit
PIK:	Phitsanulok	PCT:	Phichit	NSN:	Nakhon Sawan
UTI:	Uthai Thani	PSN:	Phetchabun		

~ Units ~

rai:	A unit for measuring an area in Thailand, equivalent to 1,600m ² or 0.16ha				
sq. m:	Square meter	sq. km:	Square kilometer	cu. m:	Cubic meter
m2:	Square meter	km2:	Square kilometer	m3:	Cubic meter

Exchange Rate: 3.795 Yen/ Baht (as of September 2007, JICA designated rate)

TERMINOLOGY

Community: Society and the people living together or sharing resources but may not be defined by the administrative boundaries such as village, tambon and/or district.

Community Development Plan (CDP): A development plan formulated through the learning process of the participatory survey in the selected communities. The plan covers several communities in same tambon.

SPK4-01: A type of land certificate ALRO issues, which allows farmer to cultivate the land but not to sell.

SPK4-01 farmer(s): Farmer who has SPK4-01 land certificate.

Villages Concerned: Both villages where SPK4-01 farmer *lives* or SPK4-01 farm plot is *located*. Those villages do not always correspond.

CHAPTER 1 PLANNING OF PILOT PROJECT

1.1 BACKGROUND AND OBJECTIVES OF PILOT PROJECT

1.1.1 Objectives of Pilot Project

Pilot Projects were carried out in the target four provinces, i.e., Phayao, Phrae, Nan and Phitsanulok from January 2006 to March 2007. Overall objectives of the Pilot Project are as follows:

Objectives of the Pilot Project

1. To verify the Draft M/P and to learn lessons in order to improve the Draft M/P
2. To practice on the job training in order to build up the capacity of stakeholders

1.1.2 Approaches of Pilot Project

In line with the concept of the draft M/P, following three approaches were emphasized and attempted throughout the Pilot Project activities such as:

- 1) To provide Learning Process
- 2) To use Local Resources
- 3) To aim at Self Reliance

(1) Provision of Learning Process

Taking into consideration the role of ALRO/PLRO in the context of natural resources management and rural and agricultural development in the LRAs, the draft M/P stated a principle that it should focus primarily on providing “learning process” for farmers to build capacity for their livelihood improvement and natural resources management towards the development goals rather than constructing any infrastructures. Accordingly, most of project activities are composed of, but not limited to, workshop, study tour and practice.

(2) Use Local Resources

With the view of developing comprehensive capabilities of local society including government agencies and local people/ community as well as the unity among them, the draft M/P aims to make networks among local human resources. In all over the country, a variety of local human resources of individuals and organizations can be found as those who have practical knowledge and capabilities. The pilot projects aim to link these local human resources to the farmers, in order to make full use of them. In addition, the Pilot Projects aim to make use of natural resources, social and financial resources in sustainable manner. Activities can be expanded in and around Land Refor Area through making use of such local resources.

(3) Aiming at Self Reliance

Given the fact that most of the LRAs are located in mountainous area adjacent to conservation zone, farmers may not have many opportunities to drastically improve their lives. Hence, in line with the national policy such as strengthening of “Sufficiency Economy”, the draft M/P aims to support “self-reliance” of farmers coexisting with natural resources. The Pilot Projects focus on those activities which can be operated and managed by villagers themselves in household and community levels aiming at self-reliance in terms of natural resources, agriculture and livelihood.

1.1.3 Elements of Verification of Draft M/P

One of the objectives of the Pilot Projects is to verify effectiveness and validity of the Draft M/P. The table below summarizes what elements shall be verified through the implementation process of the Pilot Projects.

Table 1.1.1 Elements for Verification

Subject	Elements of Verification
Concept	Verify the hypothesis if the proposed following three approaches can contribute to the development objectives “Appropriate Natural Resources Management and Sustainable Agriculture and Rural Development”. <ul style="list-style-type: none">- Providing Learning Process- Cooperation with Local Resources- Achievement of Self Reliance
Planning method	Verify the development planning method proposed in the draft M/P, which is based mainly on discussion and learning style with participatory approach.
Components/ activities	Verify the effectiveness of proposed components/ activities with learning process and find constraints in the implementation process and verify scale of implemented components/ activities and impact.
Monitoring system	Verify the monitoring system proposed in the draft monitoring guideline, especially on the methodology how to pick up the lessons and how to reflect them to the next action plan and implementation process of the Pilot Project as well as the draft M/P.
Implementation Organization	Verify the following: <ul style="list-style-type: none">- Approach making full use of local resources- Mechanism coordinating with agencies concerned and local resources- Role of stakeholders such as ALRO/ PLRO, TAO and villagers- Coordination among coordinator, villagers and agencies concerned
Networking system	Verify learning and dissemination mechanism of pilot project activities among local people and local resources as well as making network.
Others	Verify the following: <ul style="list-style-type: none">- Selection process of pilot project sites

1.2 PILOT PROJECT AREA

1.2.1 Basic Approach to Select Pilot Project Areas

Areas where participatory survey was conducted were selected as pilot project areas. In order to assure smooth implementation of pilot project, it was deemed necessary to have commitment of villagers as implementer, and of TAOs, agencies concerned and local resources as supporters. Areas where participatory survey was conducted had advantage in implementation of pilot project in terms of following points;

- (1) Representativeness: Selected areas can be representative of LRAs in each province through process of selection in participatory survey.
- (2) Initiative of PLROs: Areas for participatory survey have been endorsed by PLROs, and cooperation among villagers, TAO staffs and PLROs were being established through participatory survey process.
- (3) Social preparation and initiative of communities: Villagers in participatory survey areas had understood participatory development and formulated CDP through participatory survey process.
- (4) Natural leaders and networking: Local leaders, advanced farmers and local intellectual were found through participatory survey and network of those leaders were being developed in the participatory survey area.

1.2.2 Selection of Pilot Project Areas

Selected pilot project areas were two Tambons in Phayao (Ban Mai and Mae Ka), two Tambons in Phrae (Bor Lek Long and Thung Laeng), two Tambons in Nan (Chom Phra and Yom), and one Tambon in Phitsanulok (Ban Dong).

Table 1.2.1 Pilot Project Area

Province	M/P Code	Area (rai)	Selected Pilot Project Area			
			Amphoe	Tambon	Area (rai)	Villages
Phayao	PYO11	75,233	Muang Phayao	Ban Mai	9,748	9
				Mae Ka	2,830	18
	PYO12	25,973		Mae Ka	11,411	
Nan	ANN04	44,289	Tha Wang Pha	Jom Phra	17,728	8
				Yom	4,897	8
Phrae	PRE08	132,241	Long	Bor Lek Long	29,043	8
				Thung Laeng	48,973	10
Phitsanulok	PIK01	148,578	Chattakan	Ban Dong	75,679	14

Location maps of pilot areas in each province are as shown in Figure 1.2.1 to Figure 1.2.4.

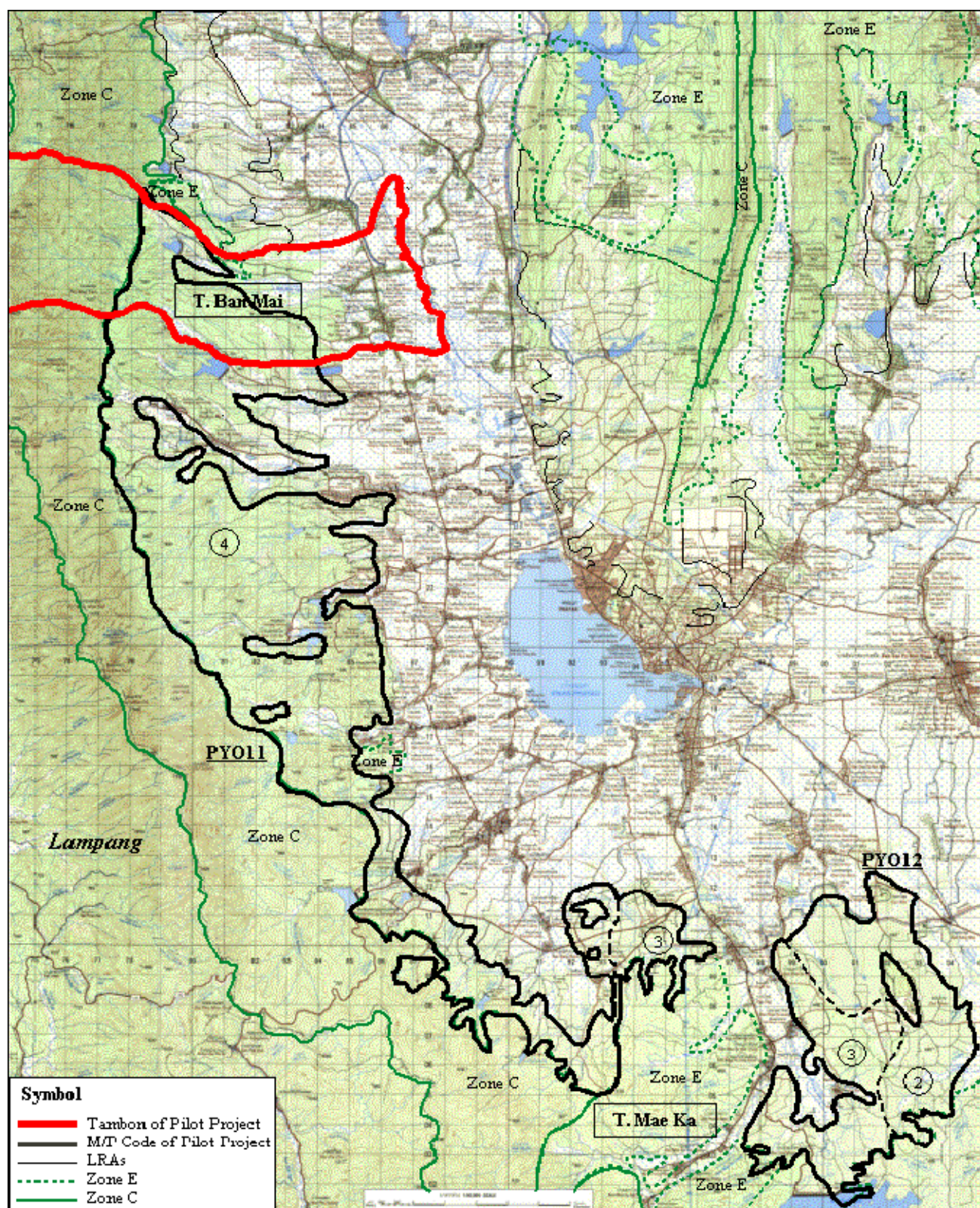


Figure 1.2.1 Location Map of Pilot Project Area (Phayao)

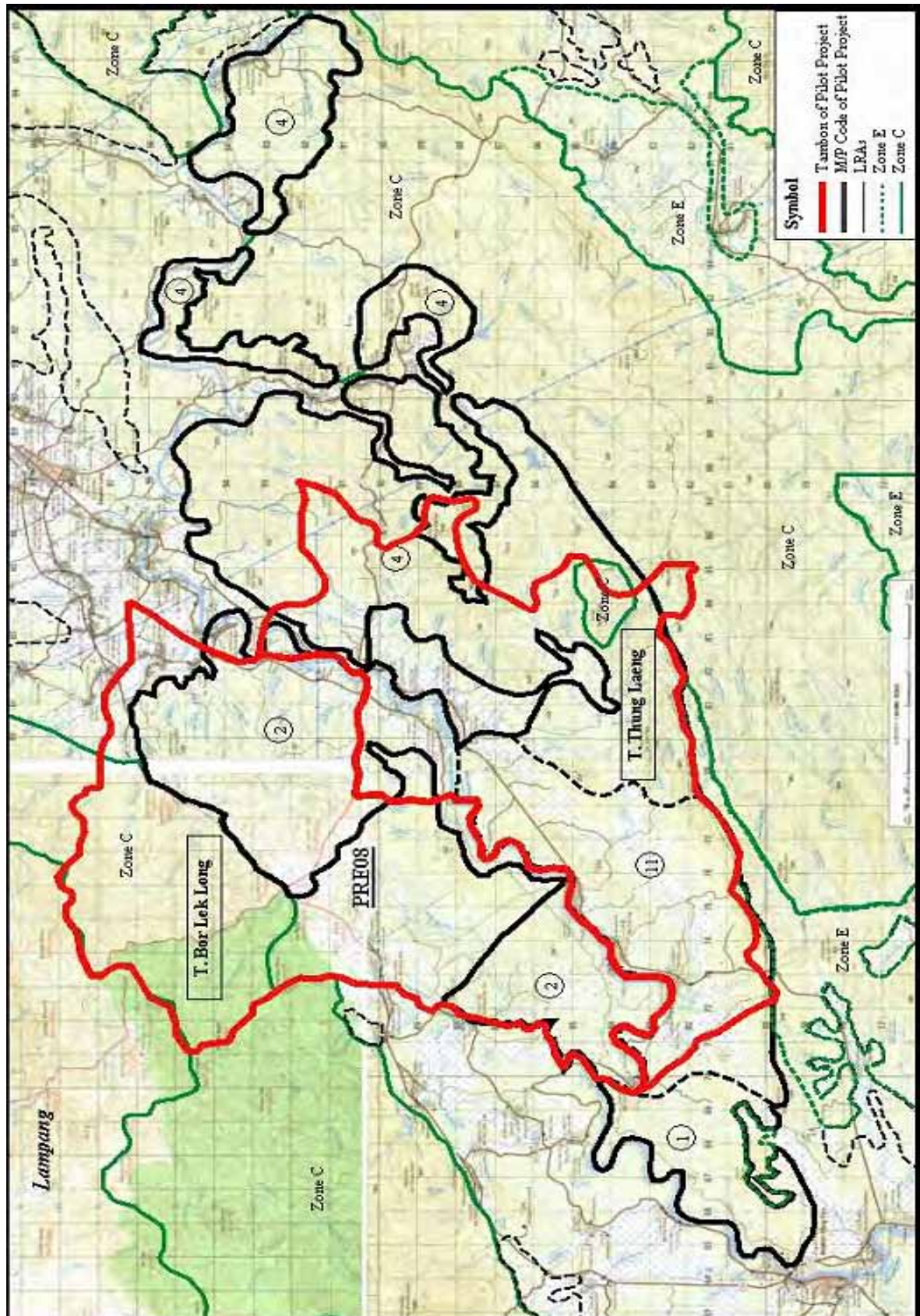


Figure 1.2.2 Location Map of Pilot Project Area (Phrae)

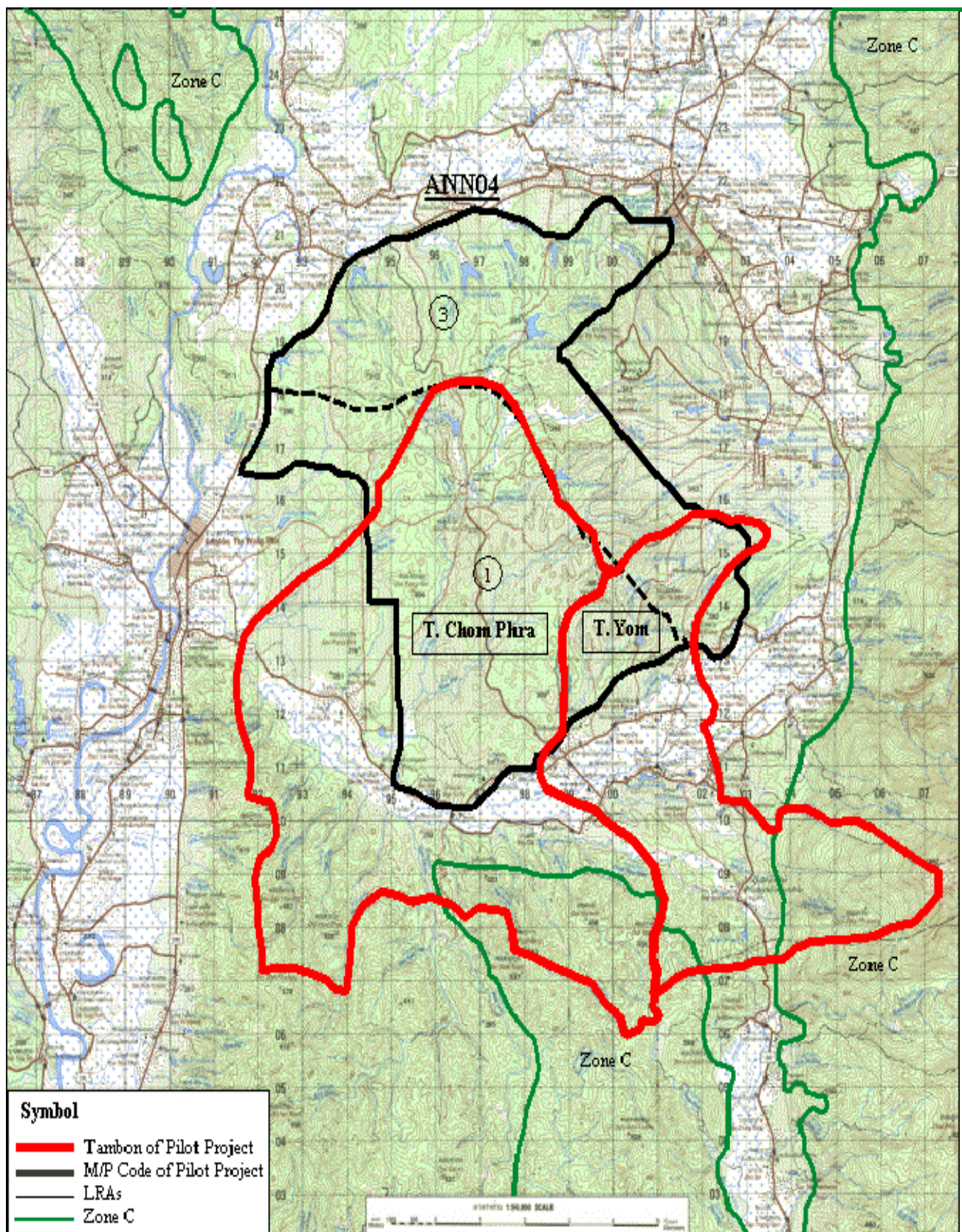


Figure 1.2.3 Location Map of Pilot Project Area (Nan)

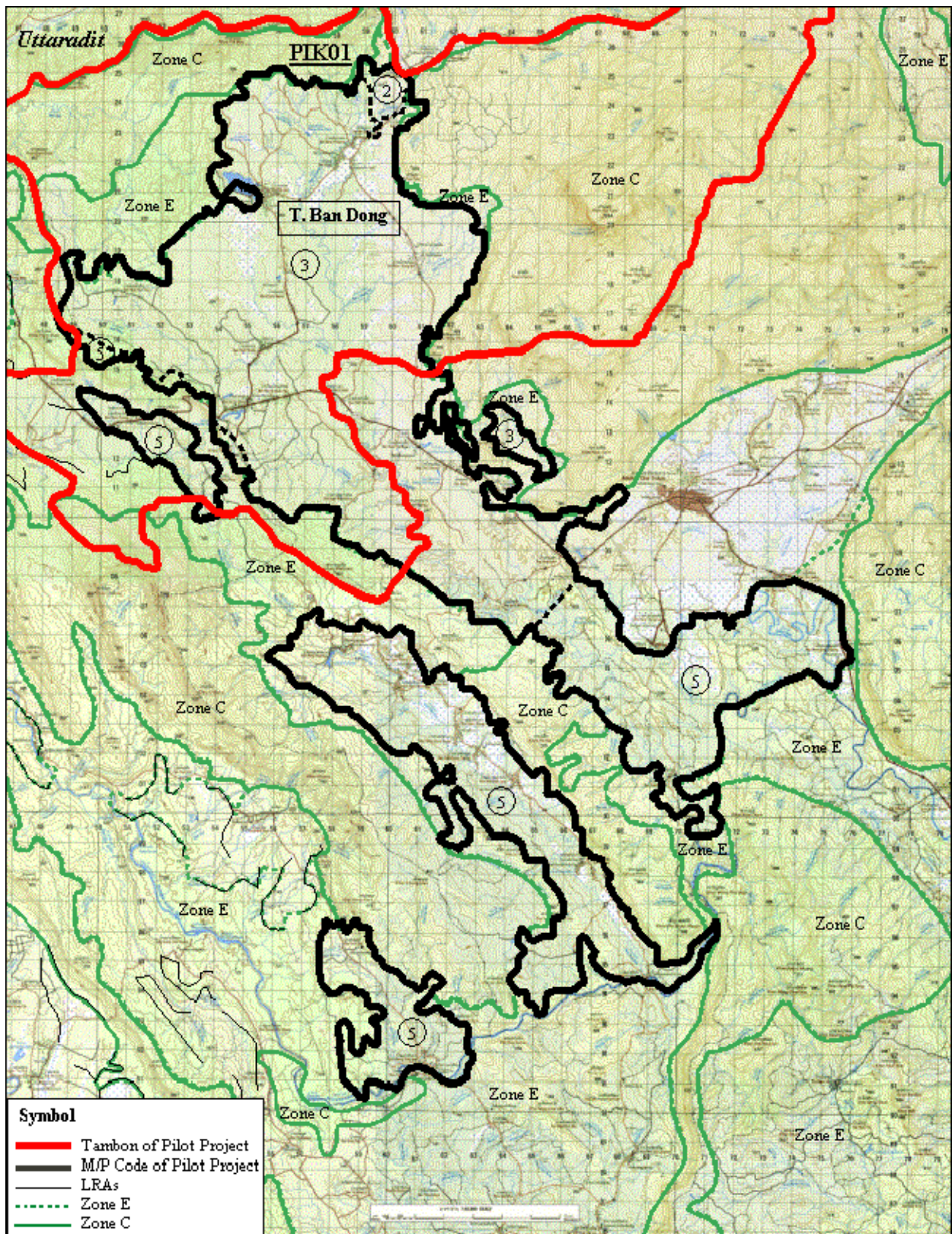


Figure 1.2.4 Location Map of Pilot Project Area (Phitsanulok)

1.3 IMPLEMENTATION PLAN OF PILOT PROJECT

1.3.1 Planning Process of Pilot Project

Pilot project activities were formulated based on CDP, which had been prepared by villagers themselves in participatory survey, and Program/ Component in draft M/P.

Process of formulation of draft M/P, CDP and plan of pilot project are as shown in Figure 1.3.1 and Figure 1.3.2.

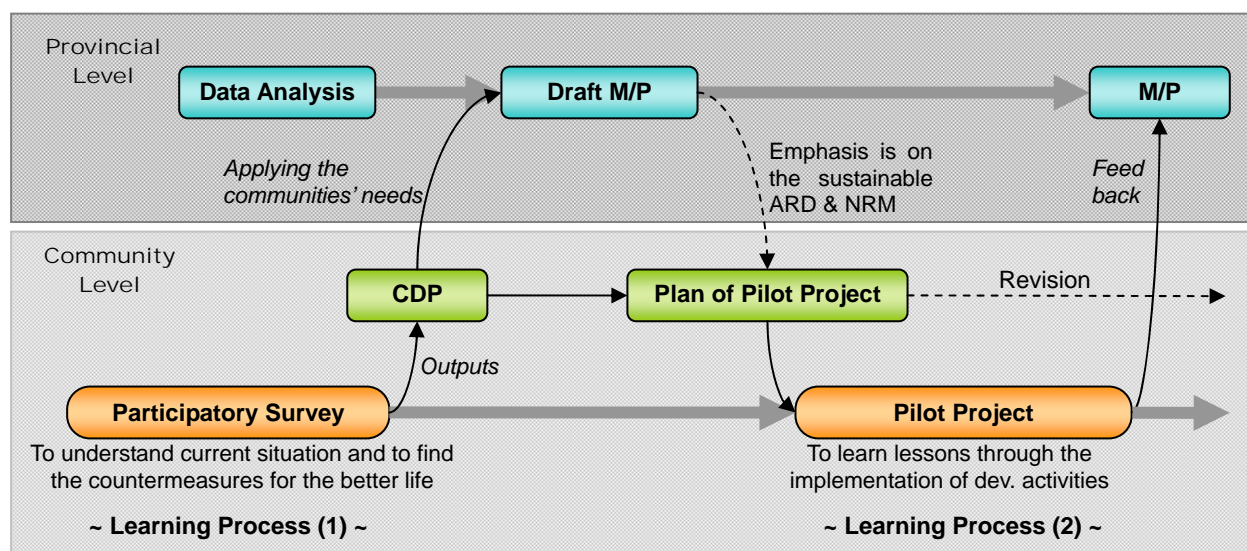


Figure 1.3.1 Process of Planning for Pilot Project, Draft M/P and CDP

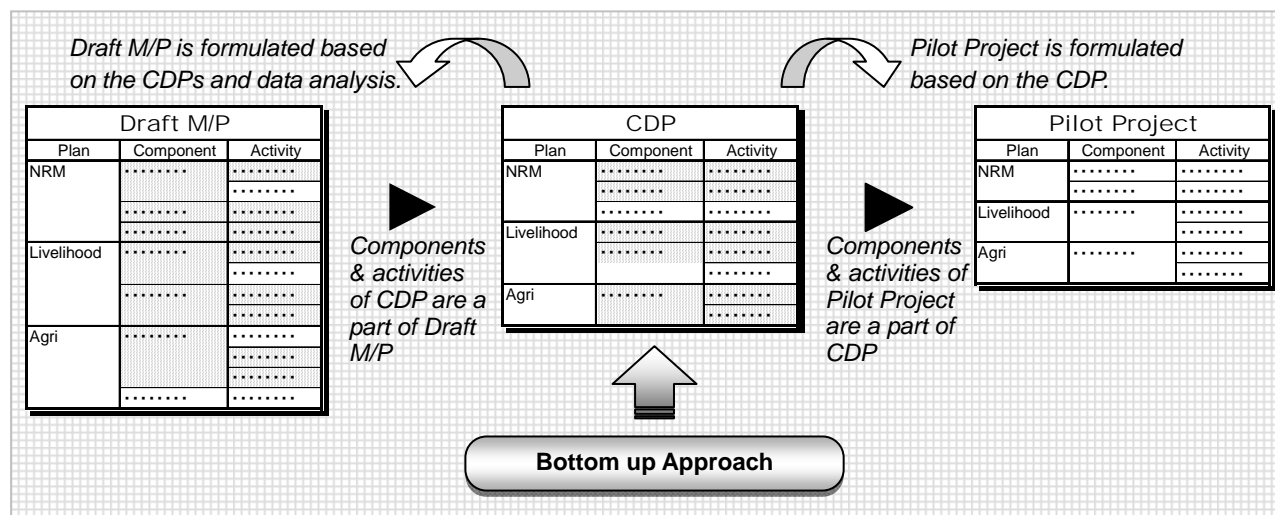


Figure 1.3.2 Plan of Pilot Project and Component of Draft M/P and CDP

1.3.2 Provision of Learning Process

Key activities of pilot project were provision of learning process such as workshop, study tour, training, small forum of villages or activity groups in accordance with basic concept, which is villagers themselves would practice after small trial based on learning in three sector plan.

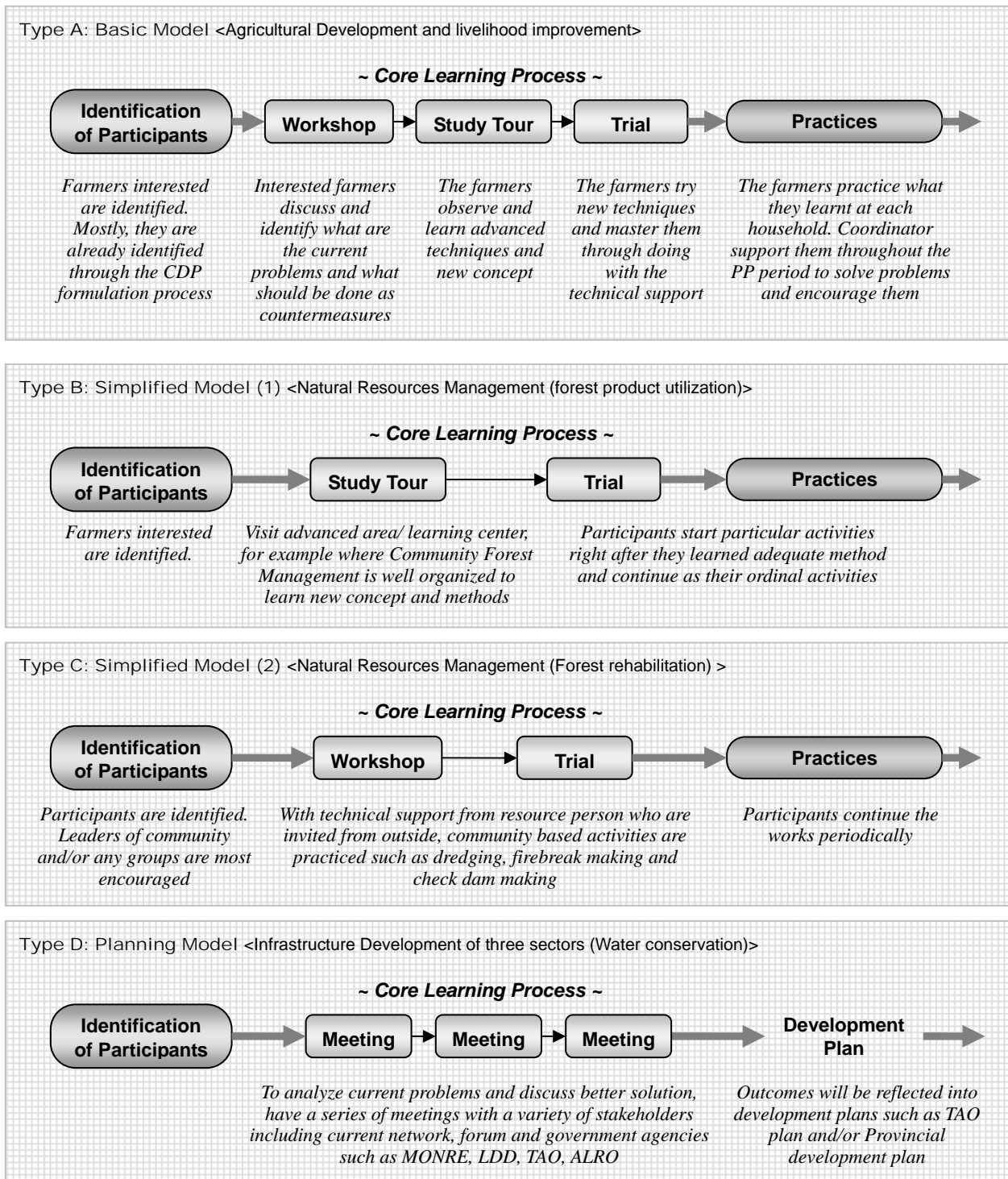


Figure 1.3.3 Model of Learning Process of Pilot Project

As many of participants in the final workshop addressed, the learning process provided by the pilot project made difference between other government projects villagers experienced so far. In most cases, study tours and trainings were organized by government agencies ad hoc bases without any needs assessment by villagers thus subjects were determined by the government agencies. There were no follow-up activities nor practice by participants thus knowledge may not stay in mind nor be utilized.

On the other hand, the pilot project provided study tours and trainings based on villagers' selected topics and the activities proposed in their CDPs. New knowledge or techniques acquired in the study tours and/or trainings were practiced on trial basis, then the results were assessed by themselves for further extension. Many of the participants appreciated the learning process approach provided by the pilot project. (refer Box 1.3.1)

Box 1.3.1 Experience of One Villages on Different Government Projects

One female participant from Phayao presented her experience to participate in different government project. Followings are the words of the lady;

“At the beginning of the JICA D/S, I thought that it was the same as the other government projects. Providing training, study tour and gone. Sometime government agencies are not serious about their job and once I heard that the project staffs were discussing, “Why do we need to do this kind of tiresome work? Let’s finish off one training and go.” “Just do it in order to keep our position at office.” Villagers wondered government agencies come for villagers, themselves or to keep their position. Training is only talking and people leave the project.”

She listed up the project implemented in her village, Mae Ka in the past

- 1999 UNDP (Community Planning, Capacity Building and Integrated Agriculture)
- 2001 BAAC (Bank of Agriculture and Cooperative loan with promotion of household account)
- 2003 Community Enterprise (Food Processing)
- 2004 Asset Capitalization (ALRO’s loan scheme)
- 2005 JICA Development Study (Pilot Project)

She continued, “All projects were good, since they emphasis on capacity building of people, which make people think to solve on poverty reduction. But it is depending on people. Several training make people stupid because they can not think about it by themselves. Most of projects persuaded people to join the project by giving financial support. They are organized in group and given money. They got problem later and the group was dissolve. Only few people are remained. Finally only signboard of the project was left. People got hurt, did not want to try again. Many people quarrel (over the project). However new project come, they start the same cycle.”

She came to touch upon JICA development study (D/S). “With D/S, people got confused. It came with different approach. No group was organized, and no money support was given. Too many projects come to community and make people confused. Many people do not want to join the project. But D/S leads people to alleviate poverty. It is a pity that project finish soon. Not many people join, but they are strong. If project can continue will help to expand/dissemination.

She concluded that “Evaluation of the project is as excellent. I think it will be agreed by the others 3 provinces.”

(Presentation at Final Evaluation Workshop on 22 February, 2007)

1.3.3 Implementation Organization and Coordination with Agencies Concerned

Pilot project were implemented under organic linkage of villagers, ALRO/ ATSAP, TAO, other government agencies concerned as well as local resources such as NGO, learning centers, and so on. At local level, coordinators (NGO), TAO and PLRO support implementor villagers directly. As for coordination among government agencies, strategy was deepening coordination with related agencies after clarify the role of stakeholders in certain activities. Implementing organization of pilot project was as shown in diagram below;

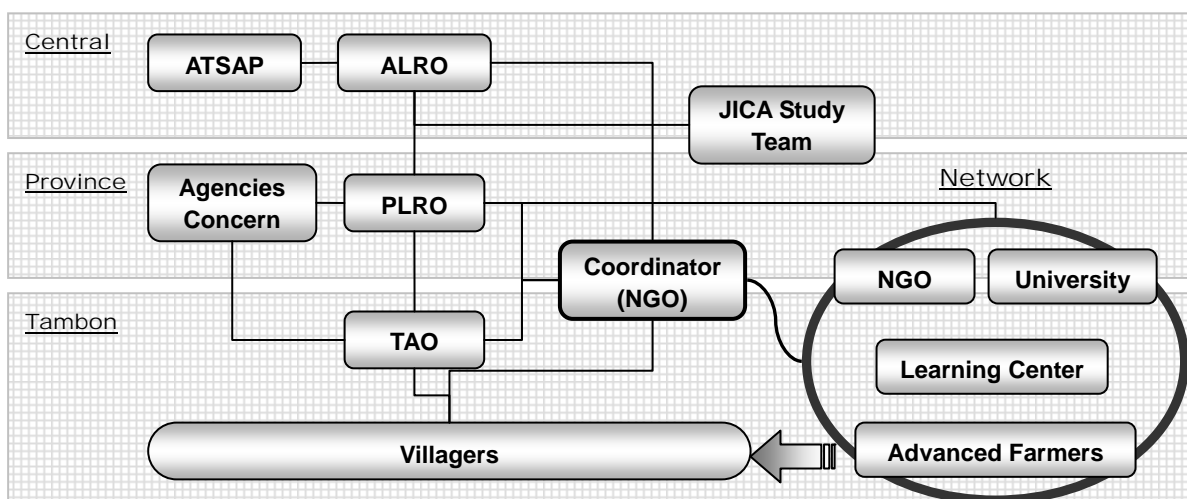


Figure 1.3.4 Implementation Organization of Pilot Project

CHAPTER 2 IMPLEMENTATION OF PILOT PROJECT

There have been many activities implemented during the period of pilot project in four provinces since May 2006. As shown in the following Table 2.1.1, in 6 out of 7 Tambons, more number of activities was implemented than the planned number as some new activities, not included in the original plan, were implemented. On the other hand, there were some activities in the original plans which were not implemented.

Progress of each activity was depending on the project sites of Tambon. There are a wide range in terms of degree of progress by activity, from the meeting/discussion, learning, trial and practice on the fields, new activity plan arisen in the work progress and planed extension of activity to neighbors. The number of planned and implemented activities is counted based on the monthly monitoring reports and/or confirmation of implementation of the related actions at field survey, as summarized in the Table 2.1.1 below.

Table 2.1.1 Number of Planned and Implemented Activities by Sector

Province	Phayao		Phrae		Nan		Phitsanulok
Tambon	Ban Mai	Mae Ka	Bor Lek Long	Thung Laeng	Yom	Chom Phra	Ban Dong
Planned							
Natural resources management	4	4	7	7	3	3	5
Livelihood improvement	3	4	5	5	5	5	5
Agriculture development	8	8	13	13	7	7	9
Total	15	16	25	25	15	15	19
Implemented (planned + new)							
(As of September 2006)							
Natural resources management	4 + 1	4 + 2	7 + 4	7 + 1	3 + 4	0 + 0	5 + 2
Livelihood improvement	1 + 1	2 + 1	5 + 0	5 + 0	5 + 0	0 + 0	4 + 0
Agriculture development	7 + 2	7 + 3	12 + 0	12 + 0	7 + 0	0 + 0	7 + 1
Total	12 + 4	13 + 6	24 + 4	24 + 1	15 + 4	0 + 0	16 + 3
(As of January 2007)							
Natural resources management	4 + 2	4 + 3	7 + 4	7 + 1	3 + 6	0 + 0	5 + 2
Livelihood improvement	1 + 2	2 + 2	5 + 0	5 + 0	5 + 0	0 + 0	4 + 0
Agriculture development	7 + 2	7 + 3	12 + 1	12 + 1	7 + 2	0 + 0	8 + 2
Total	12 + 6	13 + 8	24 + 5	24 + 2	15 + 8	0 + 0	17 + 4

Activities have been implemented in the six Tambons except Tambon Chom Phra, in Nan Province. In all those Tambons, the number of implemented activities was more than the planned. This resulted from the fact that local people implemented some new activities which were not included in the original plan of operation, as they thought that those ones were more suitable to be implemented rather than the original ones. On the other hand, there are some planned activities which any actions have not been taken.

The following section describe process and components of the pilot project, featuring characteristics of each province.

2.1 PHAYAO PROVINCE

Smooth implementation supported by good relationship between facilitator with working experience in the community and community leaders

Firstly, a study tour to Chiang Rai Province was conducted for community leaders of two Tambons, Tambon Ban Mai and Tambon Mae Ka, to study on community forest activity and organic farming. Using knowledge and findings from the study tour, Community Development Plan was formulated. Following this, public hearing was organized to discuss on CDP. Through the public hearing, 15 activities in Tambon Ban Mai and 16 in Tambon Mae Ka were selected and implemented as priority activity by villagers. NGO coordinator of Phayao was also a member of the community and had good relationship with community leaders that had been fostered by experience of working together in a number of projects, such as UNDP project, in the past. This is a factor that contributed to smooth implementation of the pilot project in Phayao.

Natural Resource Conservation activity through cooperation and coordination among Community Forest Committee, related organizations and neighborhood communities.

Activity on Community Forest was one of the activities with high-priority. In this project, Community Forest activity was implemented under leadership of existing Community Forest Committee established formally, or volunteer group for forest conservation, in cooperation and coordination with TAO, MONRE and neighboring villages or Tambons. The activity started from formulating regulations on community forest utilization as well as sharing information and knowledge about valuable species in the forest. Then, such activities as survey on community forest, reforestation activity, making firebreak and putting boundary markers were conducted. Through this process, capacity building of local people was promoted in terms of natural resource conservation and management as well as awareness of its importance in their own livelihood and farming.

“Happiness”- A key point to promotion and extension of livelihood improvement activities led by existing women’s group

In terms of livelihood improvement activity, women’s group in Tambon Mae Ka has started making daily commodities to reduce expenditure since CDP stage. A group of women who learned the skill of daily commodity making in training was developed to be resource persons in order to extend the skill further to 400 household in four villages in Tambon Mae Ka. In Tambon Ban Mai, a training was organized for four women’s group, who later played important role in extension of the activity as instructors in a series of training, even in other district. It is considered that conducting trainings for existing women’s group in cooperation with other related agencies would be one of the factors which contributed to remarkable extension of the activity. In addition, it is also a factor that the participants felt “happiness” not only in direct outcome of reduction of expenditure, but also in joining a process of working together.

On the other hand, in the case of compost making groups, which were newly organized after training, they came to break up when they learned no financial support from TAO. It suggests that establishment of new group needs deliberate preparation and consideration in advance.

Learning from comparison of sustainable agriculture practice and conventional farming and group learning on cattle raising

In terms of sustainable agricultural development, training and study tour were conducted in cooperation with Phayao Agricultural College as local resources. Though they had 30 to 60 participants, those who put what they learned into practice were less than a half of the participants and those who continued their trial further decreased to one-third of the participants. Farmers who practiced new method, however, made sure about their outcome by comparing production and cost of both new and conventional methods.

While other activities were targeted to individual or household, cattle raising activity was designed to use group approach as learning process. It was one of the good outcome that group members came to share their knowledge and experience on management of cattle raising through regular meeting and visiting each other.

2.2 PHRAE PROVINCE

Difference of the number of activity between two Tambons that results from difference in facilitator's intervention.

In Phrae Province, two neighboring Tambon worked out together to design the CDP composed of 24 activities. In Tambon Bor Lek Long, many of the planned activities were put into action with sufficient follow-up from the NGO coordinator. On the other hand, the coordinator did not access frequently to another Tambon, Tambon Thung Luang, leading to less follow-up implementation stage and less successful result.

Community participation to natural resources conservation activities based on traditional culture and belief

“Ceremony for animism of head water source protection” and “Ordination of trees”, conducted in December 2005, in the first stage of the pilot project were activities based on traditional culture and folk beliefs in Northern Thailand. Starting activity of forest utilization and conservation by such ceremony for getting permission of the local spirits was device for promoting local people's participation into the project. In 2005, with cooperation of TAO, 300 people joined the ceremony. Later, in Tambon Bor Lek Long, with support from national park staffs and TAO, construction plan of check dams for conservation of water resource was designed. During 2 years of the construction, check dams were newly constructed or repaired in 60 sites with more than 100 participants from the Tambon. This case became a model to other areas and can be regarded as significant progress in terms of people's participation in natural resource conservation.

Relationship with MONRE was improved through the pilot project. Community forest committees in 2 Tambons have been already established and in function. Under leadership of those communities, activities of making fire break as well as putting forestry boundary markers were conducted with financial and technical support from MONRE.

Misunderstanding on basic concept and scorn of progressive farmers

Although basic concept of sustainable agriculture was confirmed in public hearing, there was a lot of misunderstanding among villagers in early stage of the activity. For example, activity of making mix concentrated feed for pig was designed with intension of reducing production cost by introducing self-sufficient feeding as well as promoting group-learning process toward selling them in their community. Most farmers, however, expected free distribution of inputs like conventional development program in the past. As for activity of cattle raising, while there were about 100 farmers who showed interest and joined the group, only few farmer put into practice. Those progressive farmers who put the learning into practice continued to learn further through recording data and comparison of the outcome as well as information sharing with others. On the other hand, self-evaluation revealed those farmers were faced into scorn other farmers.

Expansion of bio-gas activities and network formulation after study tour

As for activity for improvement of livelihood and income generating, training of daily commodities such as shampoo and detergent was offered for a women's group of 20 members. Though training for daily commodities offered by BAAC in the past did not really successful in terms of extension, the activity in the pilot project have been extended to 20-30% of the total household within one year

Activity on bio-gas produce was not a component of the original plan of the pilot project; however, after the study tour, a farmer group suggested the activity added and bio-gas producing machine was constructed as a part of the pilot activity. The first model of the bio-gas producing machine was continuously improved and developed. Under instruction of the group, a number of the contracted bio-gas plants reached 17. The group of farmers, who are now invited as resource person even from other district, established a group of 20 members and now developing network.

After one year of implementation of the activity, study tour was conducted to visit farmers' network (In-Paeng Network) in North-eastern Thailand working for promotion of sustainable agriculture as well as natural resource management. Learning from this occasion helped the participants to have vision for future, leading to implementation of new activities.

2.3 NAN PROVINCE

Problems in selection of area and participants in Chom Phra

In Nan Province, administrative leaders were selected for local leader of the pilot project. In the pilot project, CDP was formulated for neighboring two Tambons, Yom and Chom Phra, a series of

fifteen same activities were planned for each Tambon. In Tambon Chom Phra, however, no activities were implemented because of a lack of cooperation from the formal leaders, who realized the pilot project support only learning process. Thus, it was really difficult to identify leaders for activity group and build relationship among PLRO, facilitator and villagers. In Tambon Yom, the result of the pilot project was also rather small compared to other provinces; in the joint workshop of 4 provinces for terminal evaluation, it was revealed that extent of peoples' understating on the pilot project and implementation process was different from other provinces. Yet, in spite of some confusion caused by change of leader's attitude to the project, the project in Tambon Yom started to go well since replacement of facilitator in the late stage of the Project; more people joined the activities and level of satisfaction of villagers increased.

Natural chicken raising was expanded with short-term outcome

Activities of top priority chosen by people in Nan province were production of chili, which was a main cash-crop, production of bio-fertilizer and livestock raising. As the first step, 100 people joined the training on bio-fertilizer, learning from instructor (NGO) who learned how to produce bio-fertilizer from group training by JICA in December 2005. On the other hand, in February 2006, study tour to other district in Nan province was arranged for 35 farmers to learn native chicken and pig raising.

As to bio-fertilizer for chili production, several farmers continued to keep record for comparison to the case of using chemical fertilizer. Yet, they had not reached the harvest within the project period.

As to native pig raising, four farmers put their learning into practice. However, there was no more expansion since they found the outcome not as satisfactory as expected because growth speed of pigs was slower than conventional method. Downward trend of market price of pork was also disincentive. As for chicken raising, which can be sold in 3 month, they found the production cost lower than conventional method and contributed to reduce household expenditure. Thus, those who tried natural chicken raising increased from only two farmers at first to 100 farmers. They have organized natural chicken raising group and are willing to learn more about natural chicken raising. Those who tried natural chicken and pig raising now play active role as resource persons.

Linkage of 3 sectors: blood check of residual chemical substance lead to utilization of herbs for cure and to practicing organic agriculture

Study tour to Chiang Mai in September 2005 to learn from traditional doctor who produce traditional medicine made significant impact on activity of natural resource conservation and management. Having learned effect of a variety of herb from the traditional doctor, the participants, 20 persons in total, formulated a learning group. They conducted survey on community forest in three villages and found that a wide variety of local herbs exist in their community forest. This information was widely shared with local people in neighborhood. At the same time, activities such as construction of

firebreak and planting tree were implemented with support from MONRE. Through those activities, one of the community forests was designated as "New Model of Forest village" by MONRE.

On the other hand, as to health damage by pesticide, which was revealed by blood test for examine chemical residual effect conducted in corporation with Public Health Office (PHO), they found there existed herbs which can be remedy for removing toxins. This finding promoted people's recognition of value of local herbs in community forest as well as their willingness to convert to organic farming to be free from health problem caused by pesticide.

Networking with other provinces through inter-provincial exchange and monitoring activities

Joint activity of four provinces for monitoring and evaluation helped formulation of inter-province network of activity groups. Women's group in Nan Province invited a member of Women's group in Phayao as a resource person for daily commodity making workshop, which enabled Nan group to vitalize its activity. Furthermore, they invite bio-gas group from Phrae to instruct to how to construct bio-gas plant. They also construct one set of bio-gas plant after learning form Phrae group.

By the end of the Project, capacity development of informal leaders, who have potential to be facilitators in future, were conducted through TOT and improvement of some leaders, was observed.

2.4 PHITSANULOK PROVINCE

Difference in historical background from other 3 provinces

Being different from other 3 provinces, pilot project site in Phitsanulok is settlement made by clearing forest 40 years ago. Villagers have come from not only Northern Thailand but also Northeast Thailand, making social unity of the community rather loose with a variety of cultural background and lifestyle. In Phitsanulok province, only 1 Tambon, Tambon Ban Dong, was selected as pilot project site and a project plan composed of 19 activities were formulated. Among them, 4 activities with top priority, except for kitchen garden (planting vegetable around house) were all related to natural resource conservation and management. It was partly because facilitator in Phitsanulok had more interest and knowledge in natural resource conservation and management rather than livelihood improvement or agricultural activity.

Becoming model of community forest management by networking among communities in the Tambon and with outside

In December 2005, TAO, formal and informal leaders, and members of community forest committees joined in a seminar of Lower-North Community Forest Network held at Ratchapat University. Having learned a lot about community forest management in the seminar, they formulated short-term action plan on community forest management. Based on the action plan, survey of local community forest was conducted in January and May, 2006, followed by putting boundary markers. Community forest committees established in every 4 villages organized them as one network. Their presentation on

community forest management method, which was presented at a seminar organized by Faculty of Natural Resource and Environment of Naresuan University in June 2006, received good response as a good practice. After training by MONRE, villagers could construct firebreak with support from TAO. At the same time, reforestation activity was carried out several times by 50 -100 participants each time. The knowledge and findings about community forest were also shared with young generation; In October, 2006 students of local school formulated their action plan on community forest by themselves.

Before the pilot project, relationship between MONRE and villagers was rather negative. The villagers were distrustful of MONRE because large-scale tree planting, which was substitute for loss of forest due to dam construction, was implemented by MONRE without prior consultation with local community. On the other hand, MONRE accused villagers of encroaching in reserved forests. However, through observation on these people-led activities on community forests, MONRE officials came to recognize that villagers have ability and willingness to practice forest conservation. This change of recognition helped to make improved relationship between MONRE and villagers. Activity of community forest management in Ban Dong is seen as a successful model which networked several community forests in the Tambon and it became learning center. They have received study tour from other provinces as learning center.

TAO and DOL's support to commercial level livestock activities

As to cattle raising, mostly conducted at large-scale commercial level, such inputs were provided as training, study tour to other provinces, provision of pasture seeds, and purchase of equipments for preparing feed with financial support from TAO and technical support from DOL. In Phitsanulok province, it was observed formal leaders had more commitment in the pilot project compared to other provinces. For example, not only TAO but also a provincial councilor from this area attended monthly monitoring meetings. Their action plan was utilized widely, as proposal to obtain financial and technical support from TAO or other implement agencies.

Kitchen garden activities by women's group with "Happiness"

Meanwhile, there still remain rooms for reconsideration in terms of group learning process and capacity building of villagers, especially for Integrated Agriculture group. In spite of a series of meetings, none of the members put it into practice. Study tour for visiting integrated farm plot which was arranged as additional intervention helped them go ahead to discuss extension plan and attend the training. Yet, within the period of the project, there was no one who converted farming into integrated farming. On the other hand, a group of 11 women started to grow local vegetables identified by them as well as organic vegetables in gardens around their home. Feeling of "happiness" derived from exchanging idea, sharing of harvest among the members as well as new knowledge and experience was drive for them to continue the activity.

2.5 MONITORING AND EVALUATION OF ACTIVITIES

Monitoring and Evaluation of the pilot project were conducted by participatory monitoring, in accordance with the monitoring guideline. Monitoring and evaluation was conducted through stakeholders meeting (monthly meetings, quarterly meetings, joint meeting of 4 provinces), which included both insiders (local people/villagers/LRAs farmers/ facilitators, TAO, etc.) and outsiders (PLRO, PAO, ALRO/ATSAP, NGO, Study Team). Mid-term and terminal evaluation was conducted in workshops. Since participatory monitoring was considered as a part of learning process, “change” and “new findings” made by insiders’ activities were used as index for the monitoring and evaluation. The evaluation was conducted by means of self-evaluation, in which process of each insider’s learning and change were focused. Based on the outcome of self-evaluation, stakeholders, both insiders and outsiders, shared their experiences and outcomes in the joint participatory workshop of 4 provinces, from which they identified lessons learned. Following this step, overall evaluation including evaluation and analysis of program/ component by Study Team was provided, followed by verification of M/P.

CHAPTER 3 ANALYSIS AND EVALUATION OF PILOT PROJECT ACTIVITES AND VERIFICATION OF M/P

3.1 METHODOLOGY OF ANALYSIS OF PILOT PROJECT ACTIVITIES

Component of the pilot project has a wide range of variety since the activities were planned based on CDP formulated by the idea of villagers. Evaluation of those activities was conducted by the villagers themselves by rating the activities in four rating in the terminal evaluation held from January to February 2007.

Based on this self-evaluation by villagers, Study Team analyzed high rating activities to understand success factor. At the same time, Study Team analyzed the factors lead to unsuccessful cases (activities with lower rating) to draw lessons learned and feed back to M/P.

3.2 ANALYSIS OF SUCCESSFUL ACTIVITIES IN PILOT PROJECT

3.2.1 View Points of Classification

This section classifies activities in pilot project with following viewpoints and provides analysis on four categories which received higher evaluation ratings from participants in the terminal evaluation.

View Points

- (1) Self-evaluation ratings by the participants (Excellent=4, Good=3, Fair=2, Poor=1) (Refer Table 3.1.1)
- (2) Range of activity (Public, Community, Group, Household, Individual)
- (3) Input from outside (Knowledge only, Capacity building, Technical assistance, Mobilization, Financial and material)
- (4) Linkage with other activities and sustainability
- (5) Length of time necessary for realization of outcome
- (6) Level of technical difficulty
- (7) Level of benefit realization (Public, Community, Group, Household, Individual)

Table 3.2.1 Evaluation Rating of Pilot Activities by Villagers

Program	Component/ Activities	Province			
		Phayao	Phrae	Nan	Phitsanulok
1.1 Forest produce utilization	1.1.1 Food utilization				
	Herb harvesting	3	3	4	
	1.1.2 Non-food utilization				
1.2 Forest resources management	1.2.1 Community forest establishment				
	Community forest registration	3			
	1.2.2 Community forest management				
	Strengthening community forest committee				3
	Making regulations (harvesting materials/period)	3			
	1.2.3 Forest valuations				
1.3 Forest rehabilitation	Identify valuable species/natural resources	3		3	3
	Knowledge dissemination			2	3
	1.3.1 Forest rehabilitation				
	Reforestation activities	3	3	3	3
	Making firebreak	3	2/4	3	3
	1.3.2 Reserved forest area delineation				
1.4 Soil and water conservation	Putting boundary markers	3	3	4	3
	1.4.1 Soil conservation				
	Soil improvement (making bio-fertilizer/ compost)	4	3	3	2
	1.4.2 Water conservation				
2.1 Livelihood	Construction of small-scale check dams / weirs	4/1	3	3	
	2.1.1 Non-agricultural income generation				
	2.1.2 Expenditure reduction				
	Making daily commodities (soap, shampoo, detergent, etc.)	3/4	4/3	4	2
	Making charcoal	1		2	
2.2 Fund development	2.1.3 Energy saving				
	Bio-gas Bio-diesel	3	2	3	
	2.2.1 Locally accessible capital / fund development				
	Organizing community bank / village fund				3
2.3 Health and welfare improvement	Organizing welfare fund		2		
	2.3.1 Health improvement				
	Local doctor	1			
	Chemical Residual effect on Health			3	
	2.3.2 Culture dissemination				
	Establishment of community information center	1			
3.1 Agricultural production	Learning local knowledge / traditions		2		
	Capacity building for leader				3
	3.1.1 Crop production				
	Plant local and common crops after harvesting paddy		NA		
	Plant vegetables around house (kitchen garden)	2	1		4
	Production of chili			3	
	Mushroom cultivation for food	2		1	
	3.1.2 Farming technology improvement				
3.2 Livestock development	Less chemical inputs farming		1		
	Introduction of integrated farming	4		3	2
	Introduction of soil surface protection farming		1	3	
	3.2.1 Livestock raising				
	Fish raising	2	1		2
	Swine raising	3	1		3
	Chicken raising		1		
	Cattle raising	3			3
3.3 Farm produce	Frog raising	4	1		
	3.2.3 Feed production				
	Plant pasture seeds suitable for local conditions				3
	Improvement of equipments to prepare feed in dry season				3
	3.3.1 Plant material processing				
	Fruits and vegetables processing (juice, wine, etc)	4	3		
	3.3.2 Animal material processing				
	Making fish sauce	4			
	Swine meat processing		3		

3.2.2 Typology of Pilot Activities

(1) Type A: Activities which needs knowledge, have immediate outcome to contribute to household level

Type A : Herb harvesting (1.1.1Food utilization), Planting vegetables around house (kitchen garden) (3.1.1 Crop production), Livestock raising (3.2.1 Livestock raising), Processing vegetables and fruits (3.3.1 Plant material processing), Processing fish source and swine meat (3.3.2 Animal material processing) * (); component	
(1) participants evaluation	Excellent or Good
(3) input from outsider	Knowledge only or Capacity building
(5) time necessary for outcome	Immediate outcome or Realize benefit within 1 season
(6) technical difficulty	Easy because based on general experience
(7) level of benefit	Individual

Herb harvesting, one of the activities included in natural resources management sector, was introduced in 3 provinces except for Phitsanulok. In every province, it received high evaluation grade. It is considered reason of high evaluation rating was knowledge-base input which led to the outcome immediately and direct benefit from the activity for participants. In other words, once participants have gained the knowledge about available forest produce, they can utilize it immediately in community forests nearby to gather forest produce, which is direct outcome.

Similar kind of activities as herb harvesting includes activities under sustainable agricultural development sector such as planning vegetables around house (kitchen garden) (3.1.1 Crop production), Livestock raising (3.2.1 Livestock raising), Fruits and vegetables processing (3.3.1 Plant material processing), and making fish source/swine meat processing (3.3.2 Animal material processing); however, results and outcomes of these activities were not so much distinctive as herb harvesting to be categorized.

Especially, each activity has wide variety in terms of (3) input from outside, (5) time for realization of benefit, (6) level of technical difficulty due to a wide range of variety in component. Thus, evaluation by the participants for the outcomes of these activities within 1 year period of the project showed considerable variation.

(2) Type B: Activities which need knowledge-base input, have immediate outcome and contribute to public interest

Type B: Identifying valuable species/natural resources and information dissemination (1.2.3 Forest valuations)	
(1) participants evaluation	Good
(3) input from outsider	Knowledge only or Capacity building
(5) time necessary for outcome	Immediate outcome
(6) technical difficulty	Need to obtain resources/input
(7) level of benefit	Public

Activity of identifying valuable species/natural resources as well as knowledge dissemination

(1.2.3 Forest valuations) , which were included in natural resources management sector, was implemented in 3 provinces except for Phrae province. Same as herb harvesting (1.1.1 Food utilization) in category A, input from outside was only knowledge and people could gain immediate outcome from this activity. The difference from herb harvesting is level of beneficiary range. This activity benefits public rather than individual. In spite of technical difficulty to some extent, participants evaluated it as “good”. The reason of relatively good responds to this activity, despite some technical difficulty and less benefit to individual, would be knowledge-base input which corresponded to villagers’ needs as well as immediate outcomes from the activity.

(3) Type C: Activities in wide area and benefit to public

Type C : Putting boundary markers (1.3.2 Reserved forest area delineation) , Reforestation activity, Making fire break (1.3.1 Forest rehabilitation)	
(1) participants evaluation	Excellent or Good
(3) input from outsider	Public (Tambon)
(7) level of benefit	Public

Activity of putting boundary markers of reserved forest area (Natural resource management sector, 1.3.2 Reserved forest area delineation) was implemented in all of the four provinces and received high evaluation grade in all provinces. It is notable that this activity, which contributed to public interest rather than individual benefit, was appreciated by the participants.

Characteristics of reforestation activity and making firebreak (1.3.1 Forest rehabilitation), which were conducted in all of the four provinces, is similar to that of Category C. In the case of reforestation activity, supported largely by inputs from outside (supports from MONRE), appropriate timing, quantity and quality of inputs are important for successful outcome.

These activities were planned to implement in wider area, at Tambon level, which enabled the participants to have more opportunity and place to know about the activity. This might be one of the reasons of high evaluation grade for these activities. It is considered that success of public interest-oriented activity partly depends on a wide range of implementation to some extent, which enabled more people to get know with the activity and its outcome.

(4) Type D: Activities with low input, and relatively early realization of benefit

Type D : Soil improvement by bio-fertilizer (1.4.1 Soil conservation) 、 Making daily commodities (2.1.2 Expenditure reduction) 、 bio-gas (2.1.3 Energy saving)	
(1) participants evaluation	Excellent, Good or Fair
(3) input from outsider	Mainly capacity building
(6) time necessary for outcome	Realize benefit within 1 season

Activities classified into this category, such as soil improvement by using bio-fertilizer(1.4.1 Soil conservation, natural resources management sector), making daily commodities(2.1.2 Expenditure reduction, livelihood improvement sector) and producing bio-gas/bio-diesel (2.1.3 Energy saving) have characteristics of less inputs from outside as well as relatively short time for gaining outcome. Furthermore, these activities can be linked with other activities easily, which

enables dynamic interaction by combination of several activities.

In the pilot project, such collaborated activities were observed as follows;

- Producing bio-fertilizer by using local IMO (Indigenous Micro Organism) /using this bio-fertilizer for crop production.
- Producing bio-gas using pig manure
- Producing bio-fertilizer using sludge generated in the process of producing bio-gas
- Use of fertilizer produced by villagers themselves contributed to increased crop production as well as reduction of cost for chemical fertilizer input
- Activity group for making daily commodity (detergent, shampoo, etc) also played leading role in other activities

3.2.3 Analysis of each Type

From observation of higher scored activities in terms of villagers' rating, the followings are suggested;

- (1) It is suggested that factors affecting success of pilot project activities and better rating by villagers are little input from outside (Knowledge rather than material) and short-term realization of benefit or outcome. (Type A、 B and D)
- (2) Since limited time of pilot project implementation, only 1 year implementation before evaluation, immediate benefit is most important aspect to determine villagers' rating. (Type D)
- (3) As for activities which have long-term benefit realization and public benefit rather than benefit for individual or household level, it is suggested that villagers ratings were depend on how it could be visible to general villagers that benefit of the activities and participation of villagers by implementing activities spreading over physically wide area. (Type C)
- (4) Besides above factors, many of good rating activities had characteristics of technically easy ones, linkage with other activities or expansion to other areas. They might not necessarily essential factors to project success, however it is also suggested that activities have such characteristics would most probably be succeeded.

3.2.4 Feedback of Lessons Learned from Analysis to M/P

Lessons learned from above analysis to M/P implementation at activity level are as follows;

(1) To propose potentially highly appreciated activities as “Entry Activities”

By proposing such activities with low input, immediate output and short-term benefit realization as entry activities to be implemented prior to other activities, it is expected that momentum would be created with wider participation of villagers. By implementing selected entry activities in each program/ component, it would give preferable impact on other activities. It should be included in M/P implementation method in order to have common understandings among facilitators and PLRO.

(2) Importance of implementation of public activities in wide area with large participation of

villagers

As for activities which have long-term benefit realization and public nature such as natural resources management activities, implementation in physically wide area with participation of large number of villagers as community participation resulted in high rating in the evaluation. For natural resources conservation, it is important to raise awareness of community members as a whole but not only limited people who already aware. Thus, it is proposed that activities which could involve community participation would be implemented in coordination with government agencies and institute concerned.

3.3 FEEDBACK OF ANALYSIS AND LESSONS LEARNED FROM ACTIVITIES WHICH HAD LOW RATING IN VILLAGERS' EVALUATION

Analysis were made on activities which were perceived as "1: poor" or "2: fair (may have problem)" of four ratings from participants, and on their factors affected. Pattern of problems or factors were extracted and the countermeasure were considered. They were summarized as lessons learned and feedbacks to M/P.

3.3.1 Analysis of Activities which had Low Rating in Participatory Evaluation

(1) Activities failed or with less-than expected outcome due to poor learning opportunities

"Charcoal making" and "Wood vinegar" activities in Phayao and Nan were given low rating due to low quality of produce. NGO coordinators, who has knowledge but limited experience, plays trainers role. It was suggested that there was problem of technical competence of trainers in the training.

As for Mushroom growing in Phayao and Nan, those who practiced after participate in study tour were one farmer in each province and failed in cultivation due to lack of knowledge. In the same way, people said that one-time training for fish raising was not enough to gain knowledge.

Above cases were issue of quality and quantity of learning opportunities such as training and study tour in the learning process. Trainer or instructor in the training should be practitioner for many years or with enough experience to transfer knowledge or technique. It would be recommended to utilize local resource persons who know local condition and villagers' current capacity so that villagers could access to resource person when they implementa small trial for better understanding.

It should be noted that validity of above case activities were not necessary denied because participants were still willing to continue the subject activities.

(2) Inputs for activities were not enough or unavailable in local area

Since use of "local resources" is one of basic concept of pilot activities, there were no activities which depend fully on outside resources. In some cases, however, shortage of locally available inputs occurred in pilot activities. It was reported that dead tree was not enough for charcoal making in Phayao, while it was difficult to obtain enough insects as feed for frog raising in Phrae.

It is necessary to consider not only single activity but also linkage of activities to assess available quantity of local resources. Charcoal making, for example, can utilize corncob or wood in community forest within regulation as substitution of dead tree.

In order to think about resource cycle in the local area as a whole, it is necessary to exchange idea and share knowledge among different activity groups in the local area. Necessity of activities should be examined by such local groups considering resources management.

In the extension stage, monitoring would be essential for the activities which have no problem at small scale but might cause exploitation of resources.

(3) Activities which had limited extent of practice and expansion

It was observed that such activities with small number of participants put into practice after learning opportunities had tendency to be rated lower score. Kitchen garden activity in Phayao, for example, had 30 participants in training and study tour but only 14 people, less than half, had practiced what they learned after the training. Furthermore, only seven have continued grow crops until the end of the pilot project period. It was because of people's attitude of "wait and see" others' practice whether success or not. And some might lost of interest after long time before realizing benefit of activities, though they had interested in when they participate in learning opportunities.

If only few people practiced as pilot, it would be resulted in limited learning opportunities and expansion in the community. In order to avoid shrink of learning process, the Project should try to reduce risk for villagers and provide mechanism of feedback of knowledge and lessons leaned from piloting to wider community. Institutionalization of small grant for piloting of activities and village/ Tambon level workshop for feed back, as same as the pilot project mechanism, would be recommended.

(4) Misunderstanding and different motivation of participants

There were activities which were stopped due to less popular (e.g. Traditional Doctor in Phayao) or slow in progress due to misunderstanding of objectives. Participants gave low rating to the activities when they were disappointed due to misunderstanding of the project concept. In case of fish raising and frog raising in Phayao, for example, people had expected to receive free fry (juvenile) when they participated in but there were actually no free provision of inputs from the project.

Even though the activities were planned with participation of villagers, it might be happened that objective of the activities were not consistent with people's needs. People who participated in planning might have different understanding from that of actual participants to the activities.

It should be well discussed and agreed on objectives, approaches and process of the Project among stakeholders at the beginning of planning stage or during planning of CDP. Basic concept of M/P should be fully understood by villagers before activity plan and selection of participants.

(5) Disempowerment

In Phrae, activities related to integrated agriculture such as kitchen garden and pig raising were given low rating, although activities themselves had enough good results with active participation. They seemed as success for the eyes of the Study Team but were not understood by other villagers, then resulted in low rating.

On the other hand, widely supported group activities, such as making daily commodity, created confidence of participants and participants have feeling of "Happiness" and were empowered. It could be resulted in disempowerment of practitioners if community members would not accept nor support this new trial.

These cases need moral support from outside supporters in order to continue activities. Supporters or facilitators should let formal leaders in village or Tambon understand merit of such activities and obtain support to activities or facilitate forum to feedback of objective and results of activities to other non-participants villagers to make understanding and to be opportunity of expansion.

3.3.2 Lessons Learned and Feedback to M/P

Lessons learned and items to be fed back to M/P from above factor analysis and countermeasures are as follows;

- At stage of planning of CDP and selection of activities, objective and methodology of activities should be well discussed in detail among stakeholders to confirm consistency with overall goal and basic concept of M/P. Recruitment of participants to each activities based on such consensus would make it possible to avoid misunderstanding of participants in process of activities.
- It is necessary to utilize local resource persons who have enough practice and experience in order to secure quality as well as quantity of learning opportunities. Existing local resources and newly developed local resources through activities shall be effectively developed as learning center.
- Facilitators shall have enough information of local resources and capable to coordinate with them. For M/P implementation, it is proposed that existing directory of local resources would be utilized and expanded, while facilitators shall be trained. Opportunities to exchange information periodically shall be systematized.
- Inventory and monitoring of local resources, which can be utilized in activities, shall be conducted. In addition to Participatory Survey at social preparation stage, impact monitoring of activities on natural resources shall be conducted periodically, e.g. monitoring of change of natural local resources through periodical forest survey or bio-diversity assessment.
- Behavior of risk evasion hampers emergence of practitioners. In order to have active learning process, it is proposed that necessary investment cost should be granted to pilot activities in order to reduce risk to villagers for failure. It also recommended to create forum to exchange, share and feed back the results of piloting.
- Aside from financial and technical support, it is necessary to provide moral support to

innovators. Besides feedback forum to villagers, outside supporters such as PLRO, facilitators and other agencies concerned shall convince formal leaders of villages and Tambons to get their support.

3.4 EVALUATION OF PILOT PROJECT AND VERIFICATION OF DRAFT M/P

3.4.1 Methodology for evaluation of pilot project and verification of draft M/P

Evaluation of pilot project and verification of draft M/P were analyzed in three major aspects.

(1) Process and participation evaluation

Process of participatory planning, learning process and small pilot practice were evaluated and “Validity of Concept”, “Planning Method”, and “Monitoring Method” of M/P were verified. Since participatory approach was anticipated in all steps of the process, actual participation, mechanism for participation and its results were assessed.

(2) Capacity assessment of stakeholders

Current capacity of agencies concerned, which were supporters of activity process, and local resources, were assessed. “Implementation organization” and “Networking” of M/P were verified.

(3) Evaluation of outcomes/ results of Activities

Activities were evaluated in 5 aspects (relevance, effectiveness, efficiency, impact and sustainability). “Effectiveness of Program/ component/ activities” was verified based on the evaluation.

3.4.2 Evaluation on Process and Participation and verification of M/P

Process of pilot activities was break down into “participatory survey and planning”, ”proposal of activities and implementation”, “learning opportunities and small trial” and “practice and extension” and each process was analyzed in terms of “process”, “participation” and “awareness”, which were summarized in Table 3.4.1 below.

(1) Process of Planning to Implementation

Plan of pilot activities were formulated in each Tambon after study tour to advanced area. Activities which were able to be implemented by villagers in principle, but some activities were not implemented due to difference between intention of those who planned and willingness of those who participated in study tour and trainings. Such activities proposed by actual implementer were implemented immediately. There were several activities stopped according to judgment as no or little benefits of implementation then altered to other activities with the same objective as original activity. It should be appreciated the fact that villagers did review the plan and changed.

It can be said that participants could have sense of ownership through these process. Flexible plan and implementation by villagers were considered highly operational.

(2) Provision of Learning Opportunities and Use of Local Resources

Provided learning opportunities were mainly trainings and study tours, while awareness raising in the process was also important process in the Learning Process. Study tour is effective tool not only in the planning stage but also during implementation stage. Study tour could give holistic picture of different activities in community. It can be said that provision of learning opportunities according to local condition and needs of villagers could raise awareness and facilitate activities. Provision of learning opportunities to obtain knowledge to utilize local resources rather than financial or material provision could be evaluated as successful and guide to direction of self-reliance.

Activities which had resource person in local had more effectiveness in learning due to easy access to local knowledge, e.g. traditional doctor and elder's knowledge on herbal medicine, compost making using IMO. Local institute which can provide certain technical know how which meet the local need, e.g. Phayao Agricultural College, could provide effective training.

Utilization of local resources in learning opportunities was considered very effective since it could make process easy to bring villagers to small pilot and practice of pilot activities.

(3) Small Trial to Expansion

Numbers of villagers who start small pilot or practice after study tour and/ or training were not so many. Especially in case of activities which cannot see immediate or short term benefit were less practiced. Activities in sustainable agriculture development sector which have risk on livelihood had such tendency. It can be said that provision of input to reduce risks and demonstration farm which can display benefit of activities would be effective counter measures. On the other hand, natural resources management activities could be supported by TAO so as to become sustainable in terms of continuation of activities, if collective action were conducted as public activities.

In small trial, participants were encouraged to keep record on process and results in order to compare with conventional approaches or to learn benefit. Accumulated record was shared in group meeting and/ or monthly Tambon level monitoring meeting. This was a part of learning process and contributed to expansion of activities. Lesson learned in this point was that it is necessary to adapt monitoring and recording methodology to people's habit and capacity.

Many factors such as technical level of activities, capacity of participants and others would affect to expansion of small trial to other area. While activities in livelihood improvement expanded rapidly through women's activity groups, activities in sustainable agriculture development had lesser extent of expansion. Aside from long term benefit realization in agriculture pointed out above, reason of less extent of expansion was lack of extension mechanism built in the activities.

As for activities have higher rating by villagers, practitioners gained "happiness" and self-confidence through process of activities, and positive changes of behavior of practitioners could be observed. Such empowerment aspect through out learning process should be considered as important factor to support sustainability of activities

Table 3.4.1 Process Evaluation

	Natural Resource Management	Livelihood Improvement	Sustainable Agriculture Development
Participatory Survey and Planning	<p><i><Process></i> Prior to Pilot Project implementation, participatory survey was conducted in each Tambon in pilot project area as a part of learning process. Participatory survey was conducted to collect data and information, with participation of villagers, on livelihood, socio-economic, agriculture, rural society and natural resources in each village. Community Development Plan (CDP) was formulated based on problem analysis. In the Process of CDP formulation, small meetings at village level, and Tambon level were conducted over and over. With participation of wider public, public hearing was organized in each Program to inform process of formulation process of CDP, and to make consensus on priority of Pilot Project activities.</p> <p><i><Participation></i> 3 to 15 people were participated in data collection as working groups. Forum for problem analysis called 35 to 200 people. Participation of formal leaders such as villages head men and TAO staffs were not so many at this stage. 99 to 130 stakeholders in participated in the forum.</p> <p><i><Awareness></i> Survey and analysis by villagers working groups were the first step of learning Process. Participants aware of local human resources available to activities and, natural resources with its value exist in their own community. Through problem analysis, participants aware of problem in livelihood and agriculture, then they got idea to solve such problem by discussion and study tour to other area</p> <p><i><Issues></i> Participatory survey and planning stage is social preparation period. Leaders and TAO staffs in Tambon Chom Par in Nan province should understand concept and approach of M/P during this period, but there was little active participation of TAOs and formal leaders. Meetings and forums were postponed or cancelled often due to social events such as paddy cultivation, TAO election, funeral and others. Time consuming process than expected.</p> <p><i><Evaluation></i> <i>Since this was the first time for leaders and villagers in community to conduct such large scale participatory survey and community plan formulation based on problem analysis, progress of activities were not as smooth as expected. Though it was time consuming and not smooth implementation, it was important process to raise awareness of villagers and let villagers and outsiders know deeply about history of community, local resources and changes of utilization of local resources over time. Participatory survey is deemed necessary part of learning process</i></p> <p>While some villagers dropped out from time consuming participatory learning process, leaders who participated in all the process with leadership learned process and then become facilitators in participatory survey in other area.</p> <p>It can be said that participatory survey was indispensable to improve capacity of leaders in problem analysis and planning, which is necessary part of expanding process and continuation.</p> <p><i><Lessons Learned></i></p> <ul style="list-style-type: none"> ➤ Participatory Survey was time consuming process, thus it was difficult to involve all the community members. It is necessary to explain meaning of participation over and over to have maximum participation to the social preparation. ➤ Participatory Survey should be understood as part of learning process, which includes trial and errors. ➤ Study tour is essential to have future vision of community development, which cannot be drawn from problem analysis. <p><i><Process><Participation></i> PO of Pilot Project was prepared through series of discussions after CDP formulation. Activities were prioritized by villagers. Participants in this process were villagers, TAOs, PLRO with facilitation by NGO coordinators.</p> <p><i><Awareness></i> Workshops to clarify logical linkage between output of activities and overall goal with key indicators were planned and organized, but it was failed to confirm among stakeholders to have common understanding in abstract concept and logical relations. It can be concluded that knowledge and recognition through experience of concrete activities are important, and awareness raising towards overall goal needs awareness through activities.</p>		

	Natural Resource Management	Livelihood Improvement	Sustainable Agriculture Development
Activity Plan and Implementation	<p><Issues></p> <p>Difference in number of activities in each area depends not only on situation and needs of people, but also on area of interest of facilitators. Priority activities which would implement in early stage were affected by such interest and past experience of villagers and facilitators, rather strategic importance of the activities. Some activities were included in the activity list of pilot project in line with government policy, but not needs nor willingness of villagers. Such activities were cancelled in the middle of pilot project. Villagers will may have tendency to resulted in preparation of “shopping list”. However, villagers’ decision making should be given higher priority in the learning process.</p> <p><Evaluation></p> <p>Proposal and advice from outsiders who have wider view and knowledge shall be appreciated, since some activities which were proposed by villager’s participants and facilitators who have limited experience were not necessary attractive to wider villagers.</p> <p><Lessons Learned></p> <p>➤ Villagers didn’t understand problem solving in logical thinking ways but aware gradually through concrete activities. It is, thus, important for outsiders to propose activities which would probably trigger awareness of people in order to manage project effectively.</p>		
	Planned :33 Priority Activity: 16 Number of activities in NRM was more than planned with no cancellation.	Planned :32 Priority Activity: 3 In livelihood sector, activities selected according to government policy were cancelled.	Planned :65 Priority Activity: 16 Sustainable agriculture activity have many number including fish and frog raising and etc., however, it should be understood as a whole to be a system.
Learning Opportunities	<p><Process> <Participation></p> <p>Conservation activities of natural resources management were mainly public activities. Training were conducted with small trial. Forest survey shall be conducted to monitor quality and quantity and changes in resources over years.</p> <p><Awareness></p> <p>Awareness on conservation would be raised by attending concrete activities but not by logical thinking.</p>	<p><Process> <Participation></p> <p>Many activities in livelihood improvement were conducted by groups from training, small trial to extension. Collective activities were enjoyable and gave incentives as “happiness” to continue activities.</p> <p><Awareness></p> <p>Even activities with small impact to household economy, it may raise awareness towards self-reliance</p>	<p><Process> <Participation></p> <p>Agriculture activities were basically at household level. Smaller number of people participate in small trial comparing to participants in trainings, because farmers had “wait and see” attitude to avoid risk taking.</p> <p><Awareness></p> <p>While it was rather easy to raise awareness by comparing new farming methods for sustainable agriculture and conventional ones, it was difficult to understand and to take time to transform as whole agricultural system.</p>
Small Trial/ Extension	Small check dam construction and making fire breaks would be continued every year by villagers with support of TAOs and other agencies.	Activities for expenditure reduction by making daily commodity and Bio-gas were progressed even extending to other communities	Many of sustainable agriculture activities were not practiced yet. It was necessary to have extension mechanism in pilot project. Learning centers and demonstration farm are recommended among others.

(4) Activities which were not implemented and cancelled during the process

All the activities in the plan were not implemented in Tambon Chom Pra of Nan. It was because of shortage of coordinating capacity of facilitator and PLRO to give enough explanation to convince TAO and villagers. Thus there was misunderstanding based on past experience to expect outsider's support on free input provision.

Some activities which were planned along with government policy, such as Phytic Nut and cattle raising, were cancelled due to low feasibility especially economic viability.

(5) Verification of “Concept”, “Planning method”, “Monitoring” based on process evaluation of activities

“Concept (Learning Process, Local Resources, Self-reliance” and “Planning method”, “monitoring” in draft M/P were verified in terms of effectiveness and operationally through following items revealed in evaluation of activity process.

- “Provision of learning opportunities” and “Use of local resources” were important factor to make activities possible by providing knowledge and skills meet the needs of villagers.
- Flexible learning process based on actual condition of locality can facilitate villager's initiatives and capacity to solve problems. It would be resulted in “Self-reliance”
- Participatory monitoring and evaluation activities would foster empowerment of practisioners.
- Participatory planning, which is flexibile, would give initiative to people and motivate people to sustai activities.

3.4.3 Capacity Assessment of Stakeholders and Verification of Implementing Organization in M/P

(1) Government Organization

ALRO

ALRO played overall monitoring role in pilot project Implementation. While ALRO central staffs secured project budget and coordinated with four provinces as their tasks, all staffs were also member of functional organization structure of ALRO and faced conflict of tasks and time allocation. Small problems in collection of monitoring report and preparation in stakeholders meeting were observed. For the M/P implementation, ALRO central office shall take all responsibilities which were born by JICA Study Team in pilot project, including procurement of facilitators, annual resource allocation, and preparation and informing implementation guideline, and monitoring of activities. Thus, it is recommended to set up special unit for the project management and recruit full-time staffs for M/P implementation. Capacity of the staffs on participatory development and management shall be developed.

ATSAP

ATSAP as policy formulation organization, “Learning Centers” shall be promoted as focal point

for understanding sustainable agriculture and each agency under the Ministry have to integrated into their policy. Currently MOAC has policy to develop “Learning Centers for Sufficiency Economy” in which training for farmers were organized in nation wide. For M/P implementation, government policy on sustainable agriculture shall be reflected to activities at farmer level or Tambon level. ATSAP is expected to play coordinating role in feed back lessons learned to Policy.

PLRO

PLRO played important role in selection of pilot project area, coordination with other agencies, monitoring and evaluation of activities, and organize stakeholders meetings. During the pilot project period, each PLRO faced change of provincial directors and some of project staffs. They also have operational tasks in PLRO organization structure, which were busy and given priority. Thus, their performance in pilot project was not necessarily satisfactory level. Province where provincial director and staffs were cooperative, PLRO functioned well as coordinator.

For M/P implementation, it is necessary to appoint full time project staffs in PLRO in case of larger operation than pilot project. If full time staffs would not be available, project scale should be reduced or role of PLRO shall be limited. Capacity development of PLRO staff is needed.

Government Agencies at Provincial Level

Government agencies at provincial level concerned were Provincial Administration Organization (PAO), Provincial Agriculture and Cooperative Office, Provincial office of MONRE and other government line agencies. MONRE, LDD, DOAE and DOL under MOAC involved in Pilot Project in terms of provision of knowledge and technical information.

As a result of pilot project, PAO and provincial governor declared to implement part of pilot project activities under provincial plan (e.g. check dam construction in Phrae). However, it is not clear about potential and future direction of PAO, especially financial capacity, in implementation of such activities.

There was a case of conflict between villagers and MONRE over activities in conservation forest and national park area. However, field staffs of MONRE have understood that villager’s natural resource management activities in such conservation area would contribute conservation and bio-diversity. MONRE field staffs recognized that some pilot project activities could mobilize villagers which could not be by MONRE itself, thus they started to cooperate with pilot project.

MONRE also cooperated to pilot project activities in technical training of making fire breaks, cooperation in making regulation of community forest, and provision of seedlings, which were scope of MONRE’s normal activities. While cooperation with MONRE is essential to natural resources management activities as described above, it cannot be expected MONRE to play leading role in M/P implementation due to limited number of local staffs in each province (a few staffs) as well as limited budget.

For the activities on sustainable agriculture development, line agencies under MOAC, such as DOAE, DOL provided technical knowledge on agriculture, but not necessarily relevant to

sustainable agriculture. While cooperation of LDD was essential in soil conservation, there was no clear cooperation with LDD in pilot project activities. One pilot project area had compost making plant supported by LDD and compost with bio-fertilizer became popular but use of compost on farm was limited.

TAO

Tambon Administration Organization (TAO) played important role in planning and implementation with local people's participation. Some activities such as community forest management, livelihood improvement and livestock development in Phitsanulok were integrated into Tambon Plan and being secured necessary budget. However, degree of integration to Tambon plan was varied from Tambon to Tambon. It is not easy for TAOs, in general, to play leading role by allocating budget for implementation of M/P. Because currently 80% of TAO budget is used for infrastructure and TAO has limited number of full time staff, i.e. 3 full-time staffs of which one technical staff.

(2) Local resources

Local Human Resources

In the pilot project, local resource person provided knowledge and technical cooperation in the field of herbs and traditional doctor, chicken raising, pig raising, fish raising, compost making among others. Buddhist monk played facilitator role in animism of forest conservation activity in case of Nan province. Such local resources played facilitator role in activities not only providing knowledge and technical support.

It is recommended to collect information on local resources in the target area and good practice which might be model of integrated community development.

Groups

Groups were organized through pilot project activities. Groups includes, community forest fire volunteers, women groups, saving group, fertilizer groups, bio-gas group, integrated agriculture groups, livestock raising groups.

Among these groups, women's group and bio-gas group have gained confidence in their activities and extending activities to outside communities with feeling of "happiness". In Phitsanulok, network of community forest committees were formulated and became learning center receiving study tour from other provinces. These groups can become newly developed local resources to support villagers' activities.

(3) Facilitator

It was obvious that operation of pilot project activities were affected by personal experience, capacity, interest and knowledge of facilitators as seen in case of Nan province. Though problems in progress were found in some areas in the early stage of pilot project due to lack of understanding in concept and approaches, progress and management was improved after OJT in series of stakeholder meetings and facilitator's coordination meetings.

Local NGO staffs are the most suitable to be facilitators, as in pilot project, considering necessary capacity and personality.

(4) Verification of “Implementing Organization”, “Networking” of M/P based on capacity assessment of stakeholders

Based on above stakeholders’ capacity assessment, “Implementation Organization” and “Networking System” were considered towards M/P implementation in future.

- ALRO central might face resource conflict in case of without fulltime staff. It would have problem in coordination with PLROs, monitoring and budget execution. Special unit for M/P implementation with full time staffs is recommended.
- ATSAP would coordinate at policy and central level to promote sustainable agriculture. Current policy on establishment of “Learning Centers for Sufficiency Economy” should be applied to M/P areas.
- PLROs also need to employ full-time staffs for M/P implementation.
- Coordination among TAOs and MONRE shall be continued.
- Facilitators are essential to M/P implementation. Local NGOs are suitable to play this role.
- Networking is being formulated among activity groups and individuals in some of pilot activities, and play role in extension and exchange of knowledge. It is expected that sustainability of pilot activities are assured by networking. Networks are utilized as local resources in further development of activities.

3.4.4 Evaluation on Outcomes and Verification of M/P

(1) Method for Evaluation on Activities of Each Program/component

Specific viewpoint of each of 5 evaluation criteria was set as follows;

Relevance is consistency with needs of beneficiaries as well as priority of policy. In the following evaluation at activity level, relevance to beneficiaries’ needs is mainly taken into consideration.

Effectiveness is index for the extent, to which interventions attains the objective. In the following evaluation, effectiveness is measured with viewpoint of the extent, to which outcomes of component/activity contribute to attain objectives of program.

Efficiency is index for measuring outcome against input with viewpoint that to what extent local resources was utilized for attaining basic policy of M/P.

Impact is direct or indirect influence on household finance, natural resource and society, which was made by the outcome of interventions. In this evaluation, impact on livelihood, local society, and natural resource conservation was mainly examined.

Sustainability is evaluated with viewpoint of possibility of sustaining activity after Pilot Project by villagers’ initiative

(2) Natural Resources Management Plan

Natural resources management plan consists of 10 components in 4 programs

Table 3.4.2 Program/component in Natural Resources Management Plan

Program	Expected outcome/objective	Component
1. Forest produce Utilization	Forest produce is utilized sustainable. Livelihood is improved. Awareness on forest conservation is raised.	1.1 Food utilization/harvesting
		1.2 Non-food utilization
2. Forest resources Management	Forest resource, including community forest, is managed properly.	2.1 Community forest establishment
		2.2 Community forest management
		2.3 Forest valuations
3. Forest Rehabilitation	Reserved forest zone is clearly delineated and deteriorated forests are rehabilitated.	3.1 Forest rehabilitation
		3.2 Reserved forest area delineation
4. Natural resources conservation	Soil and water in forest and cultivated area are conserved.	4.1 Soil conservation
		4.2 Water conservation

In pilot project, every component was planned or implemented, except for establishment of community forest (2.1), which has been already done before pilot project. The following shows result of evaluation on pilot project activities under 5 evaluation criteria as well as evaluation on component. (see Table 3.4.3)

Table 3.4.3 Evaluation on Natural Resources Management Plan/Component

1. Forest produce utilization program			
Objective : Forest produce is utilized sustainable. Livelihood is improved. Awareness on forest conservation is raised.			
Component	1.1 Food utilization	Province	PYO, PRE, ANN
<p><i><Outline of pilot project></i></p> <p>Indigenous knowledge about valuable species and medical herbs was provided to enable villagers to identify and utilize these forest produces, in addition to herbs, bamboo shoot and mushroom, which had been harvested in forest for food.</p> <p><i><Evaluation on Pilot Project></i></p> <p>Relevance:</p> <p>Attaining balance of utilization and conservation of forest resources contributed to achieve two tasks, livelihood improvement and natural resources conservation. The component has consistency with ALRO's program called "Food Bank Program". High evaluation rating given by participants, from 3 to 4, shows relevance to farmers needs and appreciation. (ref. Table 3.1.1)</p> <p>Effectiveness :</p> <p>It was observed recognition of utility of natural resources in community forest led to revaluation of forest resources. Villager had started prepare seedling plot for local trees after realizing value of local plants. It can be said that people became aware of importance of forest conservation. For awareness raising at community level for forest conservation, it is necessary to combine with activity for sharing knowledge widely in order to raise awareness about common goods and sustainable use of resources. At the same time, this component has direct benefit to individual, which is incentive for villagers to participate. Thus, it is regarded this component has effectiveness as the first step toward the goal, improvement of livelihood as well as natural resources conservation and management.</p> <p>Efficiency :</p> <p>Though input was only provision of knowledge, it enabled villagers to utilize natural resources in community forest. The knowledge came from local human resource such as traditional doctors or the elders. This activity required less financial or technical support from outside. It is possible to attain the objective without much support from outside financially or technically, but with good facilitation and utilization of local resources. Taking these facts into consideration, this component attained high level of efficiency.</p> <p>Impact :</p> <p>It was confirmed that reductions of household expenditure and additional income as outcome of this component gave positive impact on improvement of livelihood. As for impact on natural resource conservation and management, positive impact was observed in terms of raising awareness of forest conservation. It should be noted, however, that there is possibility of negative impact on forest resources.</p> <p>Sustainability :</p> <p>Sustainability of activity of utilizing natural resource needs sustainable use of resource as well as management ability of people for responding to changing condition. It is necessary to combine with components of 'forest management program', in which villagers should make rules and regulations for utilization of community forest and monitor the change of remaining quantity of resources by themselves.</p> <p><i><Overall evaluation></i></p> <p>This component had direct positive impact as reduction of household expenditure as well as additional income, which consists indispensable part for achieving good balance between utilization of natural resources and forest conservation. Simple input and immediate outcome can help sustainability and expansion of the activity. However, unless regulation for sustainable use of resource is established, deterioration of forest resources can be caused. Thus, when implementing program component relating to forest conservation and management, it is indispensable to emphasize public awareness raising about management of common goods rather than individual economic benefit.</p>			

Component	1.2 Non-food utilization	Province	(PYO), PRE, (ANN)
<p><i><Outline of Pilot Project></i></p> <p>Utilizing wood vinegar, which is generated in a process of making charcoal, and herb extra as natural pesticide. Objectives of the component are utilization of forest produce, practice of sustainable agriculture and reduce production cost in farming.</p> <p><i><Evaluation of pilot project></i></p> <p>Relevance :</p> <p>Wood vinegar and herb extract were consistent with needs of farmers who were interested in sustainable agriculture. In terms of non-food utilization, forest produce from community forest is also utilized as timber, about which communities have their own rules traditionally. This component, in which utilization of various forest produce was promoted for sustainable agriculture and livelihood improvement, has generated necessity of reconsidering such traditional rules. It is expected the experience in the process of changing local rules would contribute to capacity building of community.</p> <p>Effectiveness :</p> <p>This component itself was not an activity, which directly contributed to raise awareness on conservation of natural resource. However, in connection with sustainable agriculture, it seemed participants of this activity recognize the activity as something relating to natural resource conservation. Based on this observation, in order to achieve the objective of this component, understanding such issues as sustainable agriculture, forest resource and conservation of water/soil as a whole has more importance rather than regarding forest resources just as material for making wood vinegar or natural pesticide.</p> <p>Efficiency :</p> <p>Equipment for producing wood vinegar or herb extra is easy to make by villagers themselves, using ordinary materials such as drum. It can be put into practice with technical instruction in an early stage as well as knowledge about knowledge of purification, knowledge on uses and effect. In some pilot project area , however, wood vinegar had to be stopped due to failure in making charcoal caused by less-skilled instructor.</p> <p>Impact :</p> <p>In pilot project, trial of producing wood vinegar and natural pesticide as well as application to some vegetable. Yet, the outcome has not been confirmed within the project period. However, it is considered use of natural pesticide, as alternative of chemical one should contribute to reduction of agricultural production cost, positive impact on livelihood, as well as reduction of health damage caused by chemical pesticide. As to natural resources conservation, impact is indirect and can be negative as same in the case of food utilization component.</p> <p>Sustainability :</p> <p>While activity of producing wood vinegar and herb extract can be easily sustained by villagers since this component needs only some initial investment, it is not technically difficult for individual to practice. Thus it is recommended this component is introduced as group activity. For expansion and sustainability, subsidy for initial investment as well as improvement of access to fund at community level would be necessary. Same as in the case of food utilization component, setting and following rule for sustainable use of forest resource is also indispensable.</p> <p><i><Overall evaluation></i></p> <p>As same as food utilization, rule making for sustainable use and awareness raising is essential. Implementation of forest conservation component is necessary.</p>			

2. Forest Resources Management Program			
Objectives : To manage forest resources including community forest appropriately.			
Component	2.1 Community forest establishment	Province	-
<p><i><Outline of Pilot Project></i></p> <p>Most of community forest (except for some area in Nan province) had been already registered by MONRE. For these resisted community forests, community forest committee had been also established. Thus, this component was not implemented in Pilot Project.</p> <p><i><Evaluation of Pilot Project></i></p> <p>Not relevant</p> <p><i><Overall Evaluation></i></p> <p>Registration as community forest enables community to receive technical support and materials necessary for forest resource management from MONRE. In the case community forest in communities included in M/P has not yet registered, it is necessary to facilitate an occasion for MONRE to provide local people with information about registration procedure.</p>			
Component	2.2 Community Forest Management	Province	PYO, PIK
<p><i><Outline of Pilot Project></i></p> <p>Regulation on utilization of community forest was formulated in 2 Tambons of Phayao province with support from MONRE. Learning of good practice in other areas as well as OJT of existing community forest committee through relating activities enabled them to formulated regulations with local people's initiative. In Phitsanulok province, formulation of action plan with budget from TAO and building relationship with local schools and outside network was achieved through facilitation by NGO.</p> <p><i><Evaluation on Pilot Project></i></p> <p>Relevance :</p> <p>The component has consistency with government policy of community forest. Though it does not always respond to individual needs of villagers, this component is indispensable for promotion of community forest utilization.</p> <p>Effectiveness :</p> <p>Formulation of regulations as well as capacity building of community forest committee is requirements for forest resource conservation. However, for achievement of the goal of the component, fulfillment of these requirements is not enough; actual activity and action is indispensable.</p> <p>Efficiency :</p> <p>While formulation of regulation takes time, this process is indispensable for building consensus. Provision of information and example from other areas by MONRE enables villagers to start concrete discussion.</p> <p>Impact :</p> <p>Implementation of this component contributes to forest resources conservation in community forests. As can be seen in the case of Phitsanulok, it is also expected to have spillover effect on neighboring areas through networking.</p> <p>Sustainability :</p> <p>Sustainability can be found in a long history of community forest utilization and common rules on utilization. Yet, in order to sustain new activities introduced in Pilot Project, further action is necessary.</p> <p><i><Overall evaluation></i></p> <p>It was confirmed interventions from outside worked effectively to a certain extent for capacity building of community forest committee and collaboration with related organizations, which were required for successful management of community forest by villagers. When implementing a project including forest produce utilization, this component is indispensable.</p>			

Component	2.3 Forest Valuations	Province	PYO, PRE, ANN, PIK
<p><Outline of Pilot Project ></p> <p>Survey for forest valuations was conducted in all Pilot Project sites. In some communities, study tour to traditional medicine factory was conducted prior to the survey, while people in other communities visited elderly people in their community to gain indigenous knowledge about valuable species in forest. Participatory survey provided the participants with opportunities to recognize a wide variety of forest resource and its value. With initiatives of villagers, the result of the survey was widely shared and disseminated, which contributed to awareness raising and led to new activities.</p> <p><Outline of Pilot Project ></p> <p>Relevance :</p> <p>Though the component doesn't directly respond to needs of villagers, it is essential activity for sustainable use of forest resources.</p> <p>Effectiveness :</p> <p>The component set the basis of appropriate management of community forest.</p> <p>Efficiency :</p> <p>In every community forest, 10 to 74 kind of local species including valuable species were identified by 10 to 51 participants in each community. Participatory survey by villagers proved to be more efficient than that conducted by outsiders.</p> <p>Impact :</p> <p>Evaluation of forest resource led to promotion of forest resource utilization as well as awareness raising on forest conservation, which were positive impacts on livelihood and natural resources conservation.</p> <p>Sustainability :</p> <p>Without support from outside, activity can be sustained under leadership of community forest management committee. If being conducted every year, it is possible to monitor the impact of various activities of forest utilization and conservation on natural resources.</p> <p><Overall evaluation ></p> <p>This component should be implemented prior to utilization of forest resource or activities for forest conservation. Forest evaluation survey and dissemination of gained knowledge are a set of essential activities. Since this component can be also utilized for monitoring the outcome and impact by forest produce utilization or conservation activities, the component is regarded as indispensable activity in natural resource management plan.</p>			

3. Forest Rehabilitation Program			
Objectives : Reserved forest zone is clearly delineated and deteriorated forests are rehabilitated.			
Component	3.1 Forest Rehabilitation	Province	PYO, PRE, ANN, PIK
<p><i><Outline of Pilot Project ></i></p> <p>Reforestation activity and making firebreak was implemented in every 4 provinces. Being supported by ALFO and MONRE with provision of seedling, reforestation activity was implemented by a lot of participants from communities. It contributed to awareness raising of people about forest conservation.</p> <p><i><Evaluation of Pilot Project ></i></p> <p>Relevance :</p> <p>These activities are concrete action necessary for the goal of natural resource conservation and management by villagers. When implemented in Pilot Project, not only community forest committee but also a lot of villagers joined the activities. Evaluation by the participants also showed high grade. Taking these points into consideration, it is supposed the component is relevant to villagers' needs.</p> <p>Effectiveness :</p> <p>It was proved reforestation activity and making firebreak contributed to recovery and conservation of community forest. At the same time, it was also recognized these forest conservation activities are what villagers can contribute and participate most directly, with proper capacity building. In Phitsanulok Province, it was found the number of forest fire that occurred in dry season decreased 1/4, showing the component had direct and immediate outcome.</p> <p>Efficiency :</p> <p>Activity of putting firebreak only needs initial training by MONRE to community forest committee as intervention, which enabled villagers to conduct by themselves every year. Furthermore, this activity leads directly to forest conservation. Considering these points, making fire break is regarded as an activity with good efficiency. As for reforestation activity, it is effective in terms of recovery of community forest. However, it is more efficient to grow seedlings of local special species in community rather than depending on seedling provided by outside agencies.</p> <p>Impact :</p> <p>Positive impact by decrease of forest fire on natural resource conservation is able to found in increase of forest resource, that is, animals and plants in forest. Increase of forest resource leads to improved livelihood, if being utilized sustainable. On the other hand, reforestation activity, in which more than 100 villagers participated, is supposed to make positive impact on awareness raising of villagers about conservation.</p> <p>Sustainability :</p> <p>Making firebreak, which needs to be implemented every year before dry season, can be conducted by villagers under leadership of community forest committee after initial training by MONRE. In training by MONRE, only intervention by outsiders, it is also possible to learn from examples of other community forests, making the activity more sustainable. On the other hand, in most cases of reforestation activity, seedling was provided for free by government agencies such as ALRO and MONRE. In that case, variety of species as well as quantity of seedling was determined by those government agencies. As already introduced in Phrae Province, cooperative work for raising seedlings of native or local special species in each community forest would make the activity more sustainable.</p> <p><i><Evaluation on component ></i></p> <p>For rehabilitation of deteriorated forest, it is important to plant trees continuously for preventing further loss of forest by fire at the same time. Together with establishment of regulation, these activities are also important for sustainable use of forest produce. For achieving objectives, importance of the component is high and should be implemented in every area. Since the component needs coordination with related implementing agencies, not only community forest committee but also PLRO and TAO are required to play important role.</p>			

Component	3.2 Reserved forest area delineation	Province	PYO, PRE, ANN, PIK
<p><i><Outline of Pilot Project></i></p> <p>Though land reform area is marked in maps, the actual border is not clear. Furthermore, border line of reserved forest marked on map made by MONRE does not always coincide with the one on Alto's map. In such circumstances, continuous encroachments have occurred by villagers who do not clearly recognize the border of reserved forest. In Pilot Project, boundary markers for showing the boundary of community forest were put based on confirmation by MONRE and ALRO, which resulted in decrease of encroachments to reserved area.</p> <p><i><Evaluation of Pilot Project></i></p> <p>Relevance :</p> <p>Though not responding to needs of villagers directly, it is indispensable activity for sustainable use of forest resources. The component has ensured outcome and received high evaluation grade from villagers. It is recommended to put boundary markers in all reserved areas.</p> <p>Effectiveness :</p> <p>Since this component is basement for preventing encroachment to reserved forest, it should be implemented earlier in all areas, even without M/P.</p> <p>Efficiency :</p> <p>Using GPS, exact boundary on actual location was shown by MONRE, on which villagers put boundary markers. Participation of villagers helped the activity to be conducted efficiently. Since commitment of MONRE is indispensable for smooth implementation of the activity, efficiency depends on relationship between MONRE and community forest committee.</p> <p>Impact :</p> <p>It was found the component had positive impact on natural resource conservation through decrease of encroachment or illegal harvesting.</p> <p>Sustainability :</p> <p>Sustainability does not really matter in this component. Expansion of awareness on forest conservation is most important issue. As to boundary markers, once being established, they can be maintained by villagers, with occasional renewal of markers.</p> <p><i><Evaluation on Component></i></p> <p>Establishment and putting boundary markers should be conducted in all LRAs in earlier stage. It is recommended that villagers participate in labor in putting boundary markers in order to raise awareness of villagers on forest conservation and then, decrease encroachment. While implementation of the component should belong to government responsibility, it is important to involve villagers in a process.</p>			

4. Soil and Water conservation Program			
Objectives : Soil and water in forest and cultivated area are conserved.			
Component	4.1 Soil Conservation	Province	PYO, PRE, ANN, PIK
<p><i><Outline of Pilot Project></i></p> <p>Activity of making bio-fertilizer/compost was implemented in all 4 provinces. Farmers who tried to use such natural fertilizer found successful outcome such as decreased cost for agricultural investment, increased production and improvement in soil fertilizations, rating the activity with high grade. In one province, the successful outcome in trial stage led to expansion of the number of farmers who practice it. While having outcome in short-term includes reduction of agricultural production cost and improvement of productivity, reduction of soil erosion is also expected if the activity is further expanded. In longer-term, it is necessary to be linked with awareness raising on forest conservation. In Pilot Project, activity that directly led to prevention soil erosion was not implemented because of lack of interest and motivation of villagers.</p> <p><i><Evaluation on Pilot Project></i></p> <p>Relevance :</p> <p>From the viewpoint of soil conservation, implementing only soil improvement (making compost) in this component would not be appropriate. Consider the issue with wider viewpoint, it would be necessary to prevent soil erosion by introducing various agricultural techniques, counter farming for example, which are useful for soil conservation</p> <p>Effectiveness :</p> <p>It is considered the component contributes to both objectives of livelihood improvement and natural resources conservation. However, without wide expansion of use of bio-fertilizer/compost in sloping ground, making compost only is not enough to attain the objective of soil conservation.</p> <p>Efficiency :</p> <p>As activity for soil conservation, making compost is applicable to just limited areas. Thus, this activity is not supposed to be efficient for soil conservation.</p> <p>Impact :</p> <p>It has been confirmed the component can make significant contribution to reduction of expenditure with maintained productivity, if being widely used as substitutes for chemical fertilizer. Yet, applicable area is limited.</p> <p>Sustainability :</p> <p>In the case introduction of techniques for soil erosion in sloping ground is included in a project in addition to making compost, it will need much more time for extension. Since intervention period from outside is limited, it is necessary to introduce devices such as 'learning center' in order to promote awareness and incentives of people for sustainable expansion of the activity.</p> <p><i><Evaluation of Component></i></p> <p>Although the participants rated this pilot activity with high grade, it is difficult to achieve the goal of soil conservation in wider area only through activity of making compost. When introducing soil conservation agriculture, which was intended in original plan, it is necessary to provide information and training on techniques for soil conservation under leadership of LDD and other agencies concerned. That information and techniques should be further extended widely through farmers, for example, who started to practice it, called 'learning center'.</p>			
Component	4.2 Water conservation	Province	PYO, PRE, ANN
<p><i><Outline of Pilot Project></i></p> <p>In some part of reserved forest area, in cooperation with MONRE, small-scale check dams/weirs were constructed with participation of a large number of villagers. This activity was appreciated since it contributed to increasing water quantity in dry season and had positive impact on biodiversity.</p> <p><i><Evaluation on Pilot Project></i></p>			

Relevance :

While construction of check-dam/weirs has been conducted by local people traditionally in some areas, it was implemented as public works in Pilot Project, involving MONRE and TAO. Finding successful outcome, provincial and municipal government of Phrae decided to include the activity into their development plan. It was also included in annual plan of Tambon in Phayao and will be implemented every year.

Effectiveness :

People's awareness on conservation as well as sense of ownership of villagers was raised, which led to establishment of basis for natural resource conservation by villagers.

Efficiency :

Check-dams/weirs were constructed with local resources (materials) and labor-contribution of 200 to 500 villagers in each area. It is considered combination with religious ceremony for animism, local belief, enabled the activity to have such a large number of participants. Conservation activity with plenty number of local people is expected to lead to raising and expansion of awareness for conservation. There observed good coordination with TAO. Considering these factors, this activity is considered to have sufficient level of efficiency.

Impact :

It was observed the number of animals and plants increased because of water resource conservation made by construction of check dams/weirs. It was also reported irrigated area was expanded due to discharge to lower stream in dry season. As can be seen in these examples, positive impact on both natural resource conservation as well as improvement of livelihood was confirmed.

Sustainability :

Check-dams/wires, non-permanent ones made by woods and stone, need to be rehabilitated or newly constructed every year, requiring mobilization of villagers and fund for the activity (mainly for food and drink at construction site) every year. Thus, it is necessary for the activity to be included in annual budget plan of Tambon or Province. In two areas, budget for the activity has already ensured by annual plan of the Tambon or the province. While a part of project site was located within reserved forest area, the activity is conducted under informal admission by local officers at present. Yet, even inside reserved forest area, activities with conservation purpose should be admitted officially. In order to ensure sustainability, institutional support of admitting activity of villagers in community forest, for conservation purpose would be necessary.

<Evaluation on Component >

Combined with religious ceremony, activity of water resources conservation was implemented with a large number of participants. As a result, water volume was increased, which contributed to biodiversity as well as agricultural production in down streams. The component is considered to be successful in awareness raising based on understanding of local environment and agriculture and, at the same time, have positive impact on livelihood.

As can be clearly seen in the above component evaluation, each activity was implemented in accordance with its objective. Even in relatively short-term, expected outcomes were observed generally. As to activity of putting boundary markers showing border of reserved forest, while normally this activity should belong to government responsibility, it was realized and actually implemented only with people's participation and commitment. Once starting to go on well, people-led activities in community forest like this example could be sustainable without support from outside. Effectiveness of those activities has been verified as what lead to goal of 'conservation of natural resources in and around LRAs' in longer term. Yet, activity in soil conservation component, especially promotion of activity for preventing soil erosion remains an

issue to be reconsidered.

The following is a list of findings in a process of pilot project. They should be reflected into a process of components/activities in future to accomplish objectives successfully.

- Recognition of utility of natural resources helps villagers notice importance of proper use and management of community forest and find linkage between issues of agriculture and livelihood, promoting their motivation to the activities.
- Study tours to advanced community and learning from indigenous knowledge are effective for the purpose of promoting utilization and conservation of community forest.
- Objectives of each program, benefit for whole areas, is able to be attained by collective activity of villagers. Villagers enjoyed and appreciated such activity with a lot of participants as one of local events. For attaining objectives, it is indispensable to implement such joint activities of villagers in coordination with related agencies.
- Combination of ceremony of traditional culture or local belief for animism with the activity enables o raising awareness for conservation based on local traditional norm about utilization and conservation of natural resources in daily life and agriculture, which leads to joint activity of villagers.
- Capacity building of community forest committee leads to sustainability of people-led activity for conservation and management as well as utilization of community forest.

(3) Livelihood Improvement Plan

The plan consists of 4 programs and 8 components. In pilot project, activities in 5 components were implemented.

Table 3.4.4 Program/Component of Livelihood Improvement Plan

Program	Expected outcome/Objective	Component
1. Livelihood Improvement (Household finance improvement)	Livelihood is improved through income increase and reduction of expenditure.	1.1 Non-agricultural income generation
		1.2 Expenditure Reduction
		1.3 Energy Saving
2. Fund Development	Community fund is established.	2.1 Locally accessible capital/fund development
3. Health and welfare improvement	Health and welfare of villagers are improved.	3.1 Health improvement
		3.2 Culture dissemination
4. Infrastructure improvement	Rural infrastructure is improved.	4.1 Social infrastructure
		4.2 Living conditions improvement

Main activities implemented in pilot project are activities for self-reliance of farmers through reduction of debt by reducing expenditure at household level, while others include activities for improvement of rural life in general such as healthy and safe living, non-agriculture income generation, and revitalization of traditional culture and indigenous knowledge.

The outcomes of implemented components/activities are summarized as follows;

Table 3.4.5 Evaluation on Program/Component of Livelihood Improvement Plan

1. Livelihood improvement			
Objective : Livelihood is improved through income increase and reduction of expenditure.			
Component	1.1 Non-agricultural income generation	Province	-
<p><i><Outline of Pilot Project ></i></p> <p>There exists activities which can be source of non-agricultural income(traditional weaving, distilling of local whisky, sewing, wood craft, etc). However, without improvement of quality of products as well as efforts on finding market opportunities, it is difficult to increase income by these activities. Since it is difficult to see and verify the outcome within project period, this component was not selected for the pilot project.</p> <p><i><Evaluation on Pilot Project ></i></p> <p>Not relevant</p> <p><i><Evaluation on Component ></i></p> <p>Since activities such as processing herbs and medical plants included in forest produce utilization program, self-making of dairy commodities (shampoo, detergent) in expenditure reduction component, and farm produce processing can be possibly developed to income generating activities in future, this component should be remained as one component.</p> <p>As for marketing, in the case of selling them as community products rather than selling through private sector, it is recommended to start from selling in community market, which is established in marketing program in agricultural development plan.</p>			
Component	1.2 Expenditure Reduction	Province	PYO, PRE, ANN, PIK
<p><i><Outline of Pilot Project ></i></p> <p>In all pilot project sites, daily commodities were made mainly by women's groups, having contributed to expenditure reduction.</p> <p><i><Evaluation on Pilot Project ></i></p> <p>Relevance :</p> <p>Women's group appreciated to join the activity. This kind of activities is also promoted by other government agencies like BAAC or Tambon government, for example. The component has enough relevance to villagers' needs as well as government policy.</p> <p>Effectiveness :</p> <p>Review of household expenditure made the participants review their consumption activity. Self-making of daily commodities such as detergent, soap and shampoo proved to contribute to expenditure reduction by 100-200 baht /month.</p> <p>Efficiency :</p> <p>Herbs which can be harvested in community forest or kitchen garden were utilized as material, while main materials were purchased from outside. In terms of utilization of local resource, efficiency is not very high.</p> <p>Impact :</p> <p>As stated above, positive impact was found in terns of expenditure reduction, while impact on reduction of debt was small.</p> <p>Sustainability :</p> <p>As these dairy commodities are consumer goods, utilization of them in daily life leads to sustainability. Though problem in quality was found in early stage, it has been solved already. Activity of women's groups has now already been expanded to other activities. Taking these issues into consideration, sustainability of the component is regarded rather high.</p> <p><i><Evaluation of Component ></i></p> <p>In addition to direct outcome as reduction of household expenditure, it is also expected concept of "sufficient economy" is recognized by women, who manage household budget. Since this component is conducted as group activity, which is expected to extend and develop into various other activities, it is recommended to</p>			

implement it as entry activity.			
Component	1.3 Energy saving/ alternative energy	Province	PYO, PRE, ANN

<Outline of Pilot Project >

In pilot project area, propane gas or firewood is generally used as fuel for cooking. With objectives of reduction of expenditure for purchasing fuel as well as forest resource conservation through improving efficiency, a range of activities were implemented.

Trial on producing bio-gas and generated from excreta of swine was conducted. According to farmers who conducted trial, it was proved utilization of bio-gas led to reduction of expense for propane gas by 300 baht/month. As for bio-diesel, it was found production cost of bio-diesel is just 0.5 baht/liter, while that of ordinary diesel is 4.5baht/liter. Yet, bio-diesel was not extended further due to limitation of used cooking oils.

<Evaluation of Pilot Project >

Relevance :

Since bio-gas has outcome obtained in relatively short term with by-products like liquid fertilizer and reduction of bad odor, objectives of M/P coincide with farmers needs. On the other hand, most farmers were not interested in charcoal making as production of wood vinegar was not successful in pilot project and also, activity of charcoal making itself was not something new for farmers.

Effectiveness :

As for bio-gas, it was proved it contributed to reduction of household expenditure. Outcome of charcoal making was not confirmed since quality of charcoal made on trial was not good enough to utilize.

Efficiency :

Production of bio-gas, a combined activity with swine raising, as well as charcoal making for producing wood vinegar have a good level of efficiency, needing equipments easily made with low cost and materials which utilize waste or dead branches. On the other hand, bio-diesel needs input of equipments from outside as well as development of system for collecting used oil for material. Thus, at present, it is not really efficient to implement bio-diesel making at community level.

Impact :

As for bio-gas making activity by farmers raising swine, in addition to positive impact on livelihood improvement through expenditure reduction, reduction of bad odor and flies is observed as impact in terms of environment/hygiene condition. Impact on forest resources conservation by charcoal making is uncertain at present and needs to wait for implementation in future. As well as extension, it is also necessary for community forest committee to formulate regulation and conduct monitoring to prevent for expansion of charcoal making to lead to illegal logging.

Sustainability :

Generally, sustainability of activities of energy saving or alternative energy depends on cost balance of inputs and their alternatives. If forest resources is exhausted, charcoal making becomes impossible. Production of bio-gas would be also reduced if swine raising is declined because of market price. On the other hand, in the case oil price hike, activity of planting physic nuts would become economically feasible. Villagers usually make a choice in accordance with relationship between goods circulation and market price. In terms of energy, it is also important to enable villagers to have many alternatives by exchanging information. As for sustainability of activity, successful case can be found in bio-gas group of Phrae province, which are now invited to many areas, both inside and outside of the province, as resource persons for extension of bio-gas.

<Evaluation on Component >

It is recommended to implement these activities of bio-gas producing combined with swine raising as well as charcoal making since they are activities closely related to life and environment of villagers. However, they need a certain level of techniques and advice from people with experiences is required. Considering impact on livelihood by escalating price of fuel for farming machines and vehicles, there might exist needs for alternative energy.. When including it into CDP, feasibility at community level should be well considered and discussed.

2. Fund Development Program			
Objective : Access to fund is improved			
Component	2.1 Locally accessible capital/fund development	Province	PIK
<p><Outline of Pilot Project ></p> <p>Saving groups, informal fund like funeral fund and credit scheme under government policy such as one million village fund existed in every project sites. However, this component was implemented only in one province. In spite of a series of collection of information and discussion, establishment of community bank by combing existing groups together was not realized (Later, policy related Villager Fund and community bank, a policy of the former government ,was abolished)</p> <p><Evaluation of Pilot Project ></p> <p>Relevance : Unknown</p> <p>Effectiveness : Unknown</p> <p>Efficiency : In spite of efforts for integrating existing saving groups and village fund into Community Fund, it was not successfully established due to failed coordination among the groups._</p> <p>Impact : Unknown</p> <p>Sustainability : Sustainability is also unclear, as this activity was not completed. In order to ensure sustainability of Community Fund itself, it is necessary for each community to design the fund as to be suitable for economic activity scale of the community. <i>For instance, community needs to choose the suitable form of fund from such alternatives as fund based on income generating activity of community (ex. Community market), / / / / / / / /</i> In the case community fund is established under management of government agency, institutional device is required to increase repayment rate.</p> <p><Evaluation on Component ></p> <p>In Pilot Project, financial support from budget of the JICA Development Study was provided for purchasing materials used in trial stage of activities. In extension stage, however, the participants needed to fund by themselves. Thus, villagers who can manage to raise fund were able to join and practice the activities (ex construction of equipment for making bio-gas was enabled by fund from cash income from maize harvest). Toward achievement of the goal, this component is indispensable for extension of activities because it is required to ensure access to loan with low interest.</p> <p>As to discussion among financial groups toward establishment of community fund in Pilot Project, it was arranged by facilitation of NGO without significant intervention by government agencies such as ALRO or Study Team. In implementation of M/P in future, advice and support from academic experts or government agencies such as expert from BAAC.</p>			

3. Health and welfare improvement program			
Objectives : Health and welfare of villagers is improved.			
Component	3.1 Health improvement	Province	PYO, ANN
<p><Outline of Pilot Project></p> <p>In this component, activity for re-evaluating utility of locally available herbs and folk remedy through 'local doctor' as well as blood test in an area with high cancer incidence for the purpose of checking impact of pesticide on health were conducted. Based on recognition of health damage caused by pesticide, which was revealed by the blood test, the former activity was used to suggest utilization of local resource (herbs) as remedy. Through this process, awareness was also raised in terms of safe food and organic agriculture. At the same time, indigenous knowledge of local doctor or elderly on herbs and remedy was utilized and re-evaluated. There were some cases, however, in which activity was closed down due to lack of interest of villagers.</p> <p><Evaluation of Pilot Project></p> <p>Relevance :</p> <p>Since health damage due to pesticide spraying as well as eating out has been revealed by the blood test, it would be necessary to convert the farming into more sustainable agriculture with limited use of pesticide. For promoting that process, this component has importance in terms of awareness raising of villagers.</p> <p>Effectiveness :</p> <p>Considering fact that illness in rural areas causes considerable cost not only for medical care but also cost for travel and loss of labor force, impact of the activity on livelihood is significant. While prevention of illness and health improvement have much importance, it is rather difficult to see the outcome in short term</p> <p>Efficiency :</p> <p>While folk remedies have been handed down by traditional local doctors in North Thailand, the number of such doctors is decreasing. Although revaluation of forest resource and health improvement through utilization of herbs is regarded as efficient from the viewpoint of outsiders, villagers tend to see such folk remedies as out of date or ineffective compared to western medicine. In such circumstances, utilization of herbs for detox enabled the villagers to reevaluate the utility of medical herbs.</p> <p>Taking cost for blood test into consideration, this activity might not be always very efficient. However, considering that efficient utilization of local herbs as well as change of mind of villagers against indigenous knowledge is enabled through this activity, it can be introduced as an efficient way.</p> <p>Impact :</p> <p>If reducing the case of disease successfully, its impact on livelihood, especially that of poor household, should be significant.</p> <p>Sustainability :</p> <p>Implementation of blood test and health check are continued by TAO and Public Health Office.</p> <p><Evaluation of Component></p> <p>Activities of this component would be varied depend on situation of each area. It is considered effective to link with traditional doctor, herbal medicine through food security campaign or learning of health impact of chemical substances.</p>			
Component	3.2 Culture dissemination	Province	PYO, PRE, PIK
<p>< Outline of Pilot Project ></p> <p>"Ceremony for animism of head water source protection" and "Ordination of trees" for forest conservation enabled participation of villagers in a large scale, which led to awareness raising on natural resource conservation. This case showed that traditional culture or local belief, which tend to be seen as nothing to do with the development project, play important role in promoting community participation. In addition, local indigenous knowledge about utility of forest resources such as valuable species and herbs was disseminated widely in the area, combined with result of forest resource survey.</p>			

< Evaluation of Pilot Project >

Relevance :

Utilization of indigenous knowledge is included in policy of 'sufficient economy' and also corresponded with utilization of local resource, which is one of basic policies of M/P. Since many villagers attach importance to religious ceremony or animism, feasibility of combining activities related to such local belief with natural resource conservation and management program is rather high.

Effectiveness :

In this component, one of the components in welfare improvement program, revaluation and utilization of indigenous knowledge and local value based on local traditional culture are expected as outcomes. Thus, the component should be regarded as that of providing opportunity for villagers to consider what community should be in order to attain goals such as common value and enhancement of social capital, rather than as direct approach to livelihood improvement or natural resource conservation. Large-scale participation of villagers, from 100 to 500 each time, proved the activity contributed effectively to achievement of the objectives.

Efficiency :

Utilization of traditional culture and local belief proved to be efficient in terms of providing a large number of villagers with opportunity and motivation for participating activities for forest conservation and water source protection. As to utilization of local indigenous knowledge about herbs, it is supposed to be more efficient rather than depending on knowledge of outside experts because it would lead to utilization of local resources which are closely related to life of villagers.

Impact :

From the result of Pilot Project, positive impact on natural resource conservation through awareness raising is expected.

Sustainability :

Sustainability of this component is not required for attaining goal. Yet, cooperation and joint activities among local people generated through utilization of local indigenous knowledge and promotion of local culture will lead to enhancement of social capital in longer term. Furthermore, it was found that handing down of local knowledge from elderly to next generation also plays important role in making people be proud of richness of their own area. If 'happiness' and richness in local culture are pursued as final goal in M/P, activities in this component should be conducted continually for longer term.

< Evaluation on Component >

Even if looking like not relevant to objective, activities based on local customs, tradition and culture are able to encourage people's initiative and motivation. In this point, the component has importance, though not always being requisite.

4.Infrastructure Development program			
Objective : Rural infrastructure is improved.			
Component	4.1 Social Infrastructure	Province	-
<p><Outline of Pilot Project ></p> <p>As activities in this component, improvement of infrastructure such as water system, rural roads and electrification are expected. However, there was no unelectrified village in Pilot Project area (among LRAs in the four provinces, only 1 village in Phayao and 1 in Phrae have not been electrified). Improvement of rural roads was also not implemented in Pilot Project due to limitation of budget and project period.</p> <p><Evaluation on Pilot Project ></p> <p>Not relevant</p> <p><Evaluation on Component ></p> <p>Presently, improvement of such infrastructure as rural roads and water system is implemented by TAO in most cases. While it is not necessary to include construction or improvement of infrastructure into M/P because it is included in 3 years plan of each Tambon, it needs to remain as one component in the program in order to be referred in a process of formulating CDP.</p>			
Component	4.2 Living conditions improvement	Province	(PRE)
<p><Outline of Pilot Project ></p> <p>Though waste disposal was suggested in CDP of Phrae province, it was not included in Pilot Project since it was later implemented as a project of TAO.</p> <p><Evaluation on Pilot Project ></p> <p>Not relevant</p> <p><Evaluation on Component ></p> <p>It was also an outcome that suggestion in CDP, that is, suggestion from villagers was taken into plan of local government. Issues on waste disposal and improvement of living conditions are important field in future which should be implemented under leadership of Tambon government with participation of villagers. Thus, it is important to coordinate the issue between CDP, which is based on villagers' needs, and development plan of Tambon. In addition to disposal of garbage from household, such issues would be raised in future as increase in agricultural waste or bad odor from swine raising, which are also related to issues in agriculture sector. Thus, this component is remained in a framework as one component for living conditions improvement.</p>			

As can be seen in the above summary, it was confirmed every activity led directly to improvement of life and livelihoods of villagers. In pilot project, outcomes in short term were confirmed in most activities. In terms of activity of making daily commodity, which is able to be conducted under villagers' initiative, the outcome and future direction for extension and expansion were confirmed within project period. On the other hand, as for such activities as non-agricultural income generation (not implemented), which need to concern further issues like marketing and trading, as well as establish of community fund, which need long time to see the outcome, intervention and action was quite limited in Pilot Project. In terms of components that are considered difficult to be conducted only with people's initiative, it may be one of the options to link with specific government program, though careful attention should be paid to consistency of government policy. As stated above, though outcomes attained only by activities of villagers within framework of M/P are limited, they can be further extend and expand toward a goal of self-reliance of the area by continual implementation by local related agencies or other programs.

The following is a list of issues revealed in implementation process of pilot project, which need to be reflected into process of activities in M/P.

- For the purpose of reduction of household expenditure, activities related to daily expenditure with immediate outcome, self-making of daily commodities for instance, are effective and easier to draw interest and motivation of women.
- It is a key factor for continuity and expansion of activities that existing women's groups play leading role in activities for improvement of life and livelihood and find 'happiness' in experience of working together.
- Though activity of bio-gas and bio-diesel need equipment for production, they can be tried and practiced enough with technical level of villagers. Even rural infrastructure construction, it is possible for villagers to implement by themselves in terms of small-scale infrastructure.
- Activities for handing down and utilizing indigenous knowledge of elderly or local traditional doctors are effective for keeping good health.
- Recognition of health damage due to pesticide by blood test can be utilized an opportunity for farmers to start paying attention to safe food as well as chemical-free and organic farming.

(4) Sustainable Agricultural Development Plan

Among 5 programs and 11 components in this sector planned in M/P, 7 components were implemented in Pilot Project.

Table 3.4.6 Program/component of Agricultural Development Plan

Program	Expected outcome/objectives	Component
1. Agricultural development	Agricultural production is increased through extension of farming method utilizing local resources	1.1 Crop Production
		1.2 Farming technology improvement
2. Livestock development	Livestock raising is promoted through improvement of feeding technique and feed production	2.1 Livestock/fish raising
		2.2 Breeding improvement *
		2.3 Feed production
3. Farm produce processing	Locally produced agricultural and livestock produce are processed and sold.	3.1 Plant material processing
		3.2 Animal material processing
4. Marketing	Improve marketing of produce	4.1 Enhancement of local circulation of farm produce
		4.2 Marketing improvement of local specialties
5. Infrastructure	Rural infrastructure for agricultural production is improved.	5.1 Water resource development
		5.2 On-farm facilities improvement

Note ; After verification, *2.2 breeding improvement was combined into 2.1 livestock raising.

Main activities of the sector are those related to increasing or stabilizing farm income for attaining self-reliance. As solutions to such issues as high agricultural production cost for fertilizer or pesticide, necessity for stabilizing income through mix-cropping and diversification, and soil deterioration due to mono-cash-cropping, activities such as reduction of production cost for agricultural inputs or livestock feeding, introduction of integrated farming, and soil improvement by bio-fertilizer utilizing IMO were implemented. With reference to objective of program the

outcome of implemented component/activities are summarized as follows;

Table 3.4.7 Evaluation on Program/Component in Sustainable Agriculture Development Plan

1. Agricultural development program			
Objective : Agricultural production is increased through extension of farming method utilizing local resources			
Component	1.1 Crop production	Province	PYO, PRE, ANN, PIK
<p><i><Outline of Pilot Project ></i></p> <p>In Nan province, bio-fertilizer using IMO was applied to production of chili, which is regional specialty, for improving production. In three other provinces, kitchen garden (planting vegetables around house) was introduced and practiced. While mushroom cultivation was also introduced in 2 provinces, it resulted in failure in both provinces.</p> <p><i><Evaluation on Pilot Project ></i></p> <p>Relevance :</p> <p>Activity for kitchen garden follows basic policy of M/P in terms of expenditure reduction as well as self-sufficiency for food. Activity for trying to reduce chemical fertilizer and pesticide used for cultivation of chili, a cash crop, has also relevance as an activity for promoting sustainable agriculture.</p> <p>Effectiveness :</p> <p>Objective of kitchen garden is mainly for reduction of expenditure, while that of production of chili, which is cash crop, is to increase income through improvement of production. As for kitchen gardens, reduction of expenditure has been only reported by a group in Phitsanulok. Outcome of chili in Nan province was not able to be confirmed since it was before cultivation at the end Pilot Project.</p> <p>Efficiency :</p> <p>In spite of a large number of participants, over 100 farmers, in training for kitchen garden conducted in Phrae and Phayao, the number of those who put it into practice is limited. Actually, except for Phitsanulok province, planting vegetables around house is not something new and has been practiced widely, which consists of the reason. On the other hand, in Phitsanulok, a women's group with 11 members started to cultivate total 43 kinds of native vegetable and herbs without pesticide, while learning each other. They have successfully attained the goal of ensuring safe food as well as reducing expenditure. Considering these cases observed in Pilot Project, when promoting kitchen garden, it would be necessary to introduce something new or different from existing activity, in terms of method or kind of crop for instance; otherwise, villagers would not get interested in the activity.</p> <p>Impact :</p> <p>In Phitsanulok, prevention of forest resource is also one of the expected outcome of introducing kitchen garden (as well as mushroom cultivation). Positive impacts on both livelihood improvement and natural resource conservation are expected.</p> <p>Sustainability :</p> <p>While sustainability of kitchen garden depends mainly on efforts at household level, as for cash crops, it also depends on outside factor in terms of market.</p> <p><i><Evaluation on Component ></i></p> <p>It is rather easy to convert from farming at self-sufficient level, small-scale and mixed cropping, into sustainable agriculture because in farming for self-sufficiency, pesticide and chemical fertilizer have not been used very much. On the other hand, large-scale mono-crop farming at commercial level is difficult to be converted since considerable quantity of chemical fertilizer and pesticide are used in such agriculture. It is because income from cash crop production is main source of cash income and farmers tend to avoid risks as much as possible. Considering such situation, as conducted in the case of chili production in Nan, it is necessary to start from cultivation in a limited trial plot, while making comparison between conventional farming and farming using IMO as fertilizer.</p>			

Component	1.2 Farming technology improvement	Province	PYO, PRE, ANN, PIK
<p><i><Outline of Pilot Project></i></p> <p>Through utilization of bio-fertilizer with IMO and alternative natural pesticide in paddy and vegetable cultivation, reduction of production cost up to 4,000 bath as well as income increase up to 22,000 baht caused by improved productivity were confirmed by the trial. Yet, it still remains at self-sufficient level. Integrated farming was introduced on trial by about 20 farmers in each of three provinces except for Nan, where diversification had been already introduced. In Pilot project, mainly it was conducted by combination of crop diversification in farming plot around house and livestock raising. While outcomes such as ensured supply of safe food and reduction of household expenditure were confirmed, it was pointed out it also caused increase in labor input.</p> <p><i><Evaluation on Pilot Project></i></p> <p>Relevance :</p> <p>For promoting sustainable agriculture, both overall concept and specific farming technique are required. For farmers, however, it is easier to start from learning of specific techniques, which enabled them gradually understand the overall concept through concrete experiences. In that point, this component is considered relevant to needs of villagers.</p> <p>Effectiveness :</p> <p>In Pilot Project, farming techniques for sustainable agriculture was applied mainly to farming plot around house for self-sufficiency. Other techniques such as cultivation of corn on sloping ground, which suffered from soil erosion frequently, have been applied to just limited areas. In order to attain the objective, extension system of farming techniques, utilization of learning center for instance, should be also taken into consideration.</p> <p>Efficiency :</p> <p>Reduction of production cost and improved productivity were attained by utilization of IMO compost and bio-fertilizer made from materials that can be easily found and obtained in surroundings. In that point, efficiency level of this activity is considered to be high.</p> <p>Impact :</p> <p>Positive impact on livelihood improvement made by diversification through integrated farming as well as reduction of production cost was confirmed. Extension of farming technique for soil conservation should make impact on natural resource conservation. but it has not yet reach that level within Pilot Project.</p> <p>Sustainability:</p> <p>As pointed out by participants, lack of labor can be an obstacle for sustainability.</p> <p><i><Evaluation on Component></i></p> <p>Farming techniques related to sustainable agriculture includes not only IMO compost or bio-fertilizer but also a wide variety of other techniques. It is necessary for farmers themselves to find farming method most suitable for their own land through trial and error and comparison with other techniques. Thus, it is important to set up place or opportunity for promoting learning process as well as exchange of knowledge /experiences among members of farmer groups. As to IMO compost, which was appreciated by farmers, is effective and suitable for introducing as entry activity.</p>			

2. Livestock development program			
Objective : Livestock raising is promoted through improvement of feeding technique and feed production.			
Component	2.1 Livestock/fish raising	Province	PYO, PRE, ANN, PIK
<p><Outline of Pilot Project></p> <p>As to feeding for middle-size or big livestock, such activities as shift from purchased feeding to self-made feeding, reduction of bad odor, IMO fertilizer for cost reduction were implemented as trial by existing livestock farmers. In addition to reduction of cost, effectiveness in mitigation of outside shock such as downward trend of produce price through bio-gas, bio-fertilizer were implemented. On the other hand, activities related to small size livestock (fish, frog, chicken, etc.) were conducted in small-scale at self-sufficient level. However, introduction of technique for chicken raising in Nan province led to additional income from selling eggs in the area. In Phayao, frog-raising activity, being sold expensive, was given high evaluation grad. As can be seen these cases, it is clear that additional income becomes good incentive for farmers.</p> <p><Evaluation on Pilot Project></p> <p>Relevance :</p> <p>Livestock which can produce animal dungs can be integrated into mix farming and cycle of sustainable agriculture</p> <p>Effectiveness :</p> <p>The component contributes to objective of improving livelihood through reduction of production cost and additional income from selling livestock products.</p> <p>Efficiency :</p> <p>Immediate outcome is expected in terms of small livestock and fish, which grow fast. As to introduction of self-made IMO feeding, efficiency is rather high since it achieved cost cutting as well as reduction of bad odor. Though activities of swine raising as well as cattle raising were affected by decreasing market price of meat, the shock was reduced by sale of meat in community.</p> <p>Impact:</p> <p>Except for cattle raising in Phitsanulok province, livestock raising in Pilot Project area is mostly conducted at small-scale for consumption within household or community. It was found the component made impact to some extent on improvement of livelihood through reduction of food expense, reduction of production cost, additional income, and diversification of income source.</p> <p>Sustainability:</p> <p>For sustainability of the activity, maintained market price is most important requirement. As can be seen in an example of cattle raising group in Phayao, capacity building of farmers' group through group learning process in order to respond to various happening and problems would lead to higher sustainability.</p> <p><Evaluation on Component></p> <p>It is recommended livestock/fish raising is basically conducted at small-scale enough for consumption in household or community as supplement for instable income from cropping or conducted as a part of integrated agriculture.</p>			
Component	2.2 Breeding Improvement	Province	-
<p><Outline of Pilot Project></p> <p>Although breeding improvement was suggested in CDP, it was not implemented in Pilot Project as it mainly consists of technical aspects such as artificial insemination rather than villagers' activity.</p> <p><Evaluation on Pilot Project></p> <p>Not relevant</p> <p><Evaluation on Component></p> <p>The activity requires close coordination with DOL and very difficult to be implemented as people-led activity. Thus, this component is incorporated to 2.1 Livestock/fish raising component.</p>			

Component	2.3 Feed production	Province	PIK
<p><i><Outline of Pilot Project ></i></p> <p>Supported by DOL, on-site comparison of several kind of pasture was conducted by farmers. In Phitsanulok province, where grazing in forest remained in a part as local habit, pasture and feed development enabled to prevent the encroachment.</p> <p><i><Evaluation on Pilot Project ></i></p> <p>Relevance :</p> <p>In response to needs of villagers, an activity that was already included in plan of TAO was implemented as pilot activity.</p> <p>Effectiveness :</p> <p>The component contributes to natural conservation through reduction of dependency on forest. If outside factor, i.e. good market price is fulfilled, it can contribute to livelihood improvement, too.</p> <p>Efficiency :</p> <p>It was intended to increase selling price of fattening cattle through production of feed and pasture during dry season, the expected outcome has not been attained because of decreased market price for cattle.</p> <p>Impact :</p> <p>There found more impact on natural resource conservation rather than livelihood improvement.</p> <p>Sustainability:</p> <p>In future, it might become a problem who is responsible for O/M cost of combines that were purchased with budget of TAO.</p> <p><i><Evaluation on Component ></i></p> <p>While this component was applied only to Phitsanulok province in Pilot Project, where cattle raising is conducted at commercial level, it can be applied to other provinces in future, where fattening cattle is also conducted. Thus, this component is left as one component.</p>			

3. Farm produce processing program			
Objective : Locally produced agricultural and livestock products are processed and sold.			
Component	3.1 Plant material processing	Province	PYO, PRE, PIK
<p><Outline of Pilot Project></p> <p>Fruit juice processed with IMO, which proved good to health, achieved successful sale in Phayao. Also, sale of products such as dried fruits and chili paste processed by women's groups contributed to increase of income. Though bamboo shoot processing was also introduced with an intention to sell at markets, it was cancelled in all provinces because of food poisoning case in outside area.</p> <p><Evaluation on Pilot Project></p> <p>Relevance :</p> <p>The activity is feasible in terms that objectives such as reduction of expenditure, increasing income and ensured supply of safe food are intended to achieve by using existing and available resource, which is corresponded to basic policy of M/P.</p> <p>Effectiveness :</p> <p>If being expanded to the extent that processed products are sold at markets outside the region, it is possible to generate additional income, making contribution to improvement of livelihood.</p> <p>Efficiency :</p> <p>Though being small-scale at present, these activities are considered efficient because processing of agricultural produce can generate added value to vegetables and fruits that are not accepted by market as they are, leading to additional income through selling in regional market.</p> <p>On the other hand, if expanding the scale of activity with investment for facilities, more consideration on seasonal change of agricultural produce as well as timing of shipping is required to maintain efficiency.</p> <p>Impact :</p> <p>Impact on livelihood is still small since the scale is small at present.</p> <p>Sustainability :</p> <p>As this is group activity, sustainability of group is essential. It is also important there exists enough market outside the area. Furthermore, group learning for such issues as quality improvement and product development will be also required.</p> <p><Evaluation on Component></p> <p>Processing would be more important</p>			
Component	3.2 Animal material processing	Province	PYO, PRE
<p><Outline of Pilot Project></p> <p>Activities in this component such as fish source making in Phayao province and sausage making in Phrae, which were conducted by women's groups, were intended mainly for consumption at household or community level, not having intention of generating additional income. The activities were appreciated by the participants in terms of supply of safe food and expenditure reduction. In Phrae, as countermeasure to decreased producer price of pork, farmers' group slaughtered swine by themselves and sold them in community to ensure benefit from swine meat.</p> <p><Evaluation of Pilot Project></p> <p>Relevance :</p> <p>Sausage and fish source are homemade food products that can be easily processed at household level. In addition to outcomes in terms of safe food and expenditure reduction, activity of processing animal produce is expected to lead to income generation, or further, to local vitalization, if being scaled up as group activity. Considering that enhancement of social capital as well as sense of "happiness" in working together, which was widely shared by participants of women's groups, are also expected, needs of villagers for the component is big.</p> <p>Effectiveness :</p>			

Since activities are still at trial stage and has not started to sell products outside of the area, objective of the program i.e. improvement of livelihood through attaching added-value to animal products as well as increasing income by selling processed products has not been achieved. In order to achieve the objective, stable production at a certain level of scale, quality improvement and marketing will be indispensable.

Efficiency :

Being still in trial stage, scale of these activities is not large enough to attain increased income. Thus, efficiency of activities is not high at present.

Impact :

Positive impact on livelihood improvement in terms of expenditure reduction and income increase was observed. Yet, being in trial stage, the extent of the impact was not very big at present.

Sustainability :

Sufficient supply of material within community and demand for the products are required for sustainability. When scaling up from community consumption level to selling outside of the area, it is required to ensure enough market.

<Evaluation on Component >

Processing would be more important

4. Marketing program

Objective : Improvement of marketing of agricultural produce

Component	4.1 Enhancement of local circulation of farm produce	Province	PRE, ANN
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<Outline of Pilot Project >

Though activity related to community market was planned in Phrae and Nan province, no concrete activities were conducted after study tour in initial stage.

<Evaluation on Pilot Project >

Not relevant

<Evaluation on Component >

In Chiang mai and Northeastern Thailand, community market, in which organic agricultural products are sold by farmers themselves, has been widely established and said to have played leading role in promotion of sustainable farming. Such activity needs to be introduced after a certain level of production in community is ensured. It would be also effective to introduce example of Japanese movement of "Local production, local consumption".

Component	4.2 Marketing improvement of local specialties	Province	-
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<Outline of Pilot Project >

In this component, it was intended to conduct learning activity about cooperative shipping and direct sales for increasing producers' price through reducing distribution cost of local agricultural products or livestock. However, it was not included in Pilot Project activities because producer price of chili, one of local specialties, was relatively high in that season. As to livestock, it was still in trial stage of improvement of feed, too early to think about marketing at that moment.

<Evaluation on Pilot Project >

Not relevant

<Evaluation on Component >

As for this component, in addition to introduction of contract farming with private sector and cooperative shipping, such issues as improvement of shipping adjustment through cold storage of vegetables need to be taken into consideration. Marketing research as well as trial process in longer-term are required.

5. Infrastructure program			
Objective : Rural infrastructure for agricultural production is improved.			
Component	5.1 Water resource development	Province	-
<p><i><Outline of Pilot Project></i> Though water resource development necessary for agricultural production including improvement of irrigation facilities, construction/ improvement of reservoir, and underwater development was intended in this component, it was not implemented in Pilot Project due to limitation of budget and time.</p> <p><i><Evaluation on Pilot Project></i> Not relevant <i><Evaluation on Component></i> As can be seen in the fact that improvement of irrigation facilities (Phayao) and underwater development (Phrae) was suggested by villagers during Pilot Project period, villagers needs for this component is significant in some areas. Thus, it is necessary to include this component in M/P. In the case of implementing it in larger scale, coordination with relevant agencies will be main activity because support from related government agencies including ALRO is indispensable in such a case.</p>			
Component	5.2 On-farm facilities improvement	Province	-
<p><i><Outline of Pilot Project></i> While on-farm facilities improvement such as improvement of farm road and soil protection was intended in this component, it was not implemented in Pilot Project because of limitation of budget and time.</p> <p><i><Evaluation on Pilot Project></i> Not relevant <i><Evaluation on Component></i> On-farm facilities improvement needed for promotion of sustainable agriculture might cause land acquisition. Therefore, it is necessary to implement the component upon farmers' recognition and understanding necessity of such improvement through actual experience of sustainable farming to certain extent.</p>			

While these implemented activities should lead to stabilization of income by diversification of income source and additional income in future, not the all expected outcomes were confirmed within short period because they mainly remained within improvement of existing agricultural activity and at household/community consumption level. Especially for soil protection, it was impossible to verify impact of application to problematic farm land including cash crops such as sloped area for maize due to time and financial limitation as well as farmers' fear for taking risk. However, implemented components/activities proved it possible to improve productivity and quality of agricultural produce, reducing production cost at the same time by utilizing material easily found in their surroundings without dependency on large-scale input from outside. As can be seen in today's extension and expansion of activities, it was of activities, it was verified conversion to sustainable agriculture is feasible and that will surely contributes to achievement of goal, i.e. improvement of livelihood of rural household through sustainable agriculture.

The following is a list of issues revealed in implementation process of Pilot Project, which need to be reflected into process of activities in M/P.

- Utilization of progressive farmers as learning center can help learning process of farmers effectively, in which they make trial and practice based on newly gained knowledge.

- It is possible to improve productivity and quality of agricultural produce, while reducing production cost at the same time, thorough organic farming with locally available materials.
- Integrated agriculture and kitchen garden contribute to reduction of household expenditure and ensured supply of safe food. Furthermore, selling the surplus in community leads to additional cash income, which can be good incentives for villagers
- In quite a short period of Pilot Project (about 1 year), integrated farming as practice of sustainable agriculture as well as activity of community market for agricultural produce were not introduced. In order to step forward to trial and practice of these activities, support for longer-term learning process, such as study tour and learning there will be required.

(5) Challenges to be Addressed for Ensuring Sustainability of Activities

Through a process of verification of components/activities, the following issues were clarified as challenges to be addressed for ensuring sustainability. They need to be taken into consideration in planning/implementation stage of components/activities.

Conservation and Management of Forest Resources

- While putting boundary marker of reserved forest is indispensable activity, it was implemented in only a part of pilot project area. It is necessary to be incorporated into budget plan of MONRE, TAO, or ALRO in future.
- Although construction of small check dam in reserved forest area was enabled by admission of field staffs of MONRE, who understood significance of the activity, it was not allowed by law. In order to enable expansion of this kind of activity in conservation area, amendment of regulations or system is necessary.
- Without proper regulation, utilization of resources in community forest could cause overexploitation and deterioration of forest resource. Community forest committee and other stakeholders should be responsible for monitoring resource utilization.
- While MONRE or ALRO provided seedling for reforestation activity in pilot project, it is recommended seedling of valuable species should be prepared by villagers themselves in future.
- Construction and improvement of check-dam as well as making firebreak, which need to be conducted annually, requires budget allocation in plan of Tambon.
- Farming techniques for preventing soil erosion requires support from LDD, NGOs with experiences in this field, and research institutes, etc.

Livelihood Improvement

- As new source of non-agricultural income generation, traditional handicraft, processed forest produce and homemade daily commodities are considered, but it requires expansion

of market opportunities and quality improvement to make them really lead to income increase.

- While reduction of household expenditure contributes not to have additional debt, stabilization of agricultural income through reduction of production cost has much more impact on household finance. Yet, for repayment of debt, income increase is essential.
- Activities for health promotion and nutrition improvement included in health and welfare program require cooperation of public health station and support from TAO. Local indigenous knowledge such as folk remedy by local doctor (i.e. utilization of herbs) must be handed over to next generation.

Sustainable Agriculture Development

- Since innovative or new activity in agriculture is often accompanied by risk, the number of farmers who put the learning into practice tends to be limited. Extension and expansion takes long time. It is important to support small trial of progressive farmers to make successful model.
- From experience of gaining support from conventional government projects, villagers organize activity groups often with expectation for obtaining free inputs (material, young fish, chick, etc.) from the project. In that case, the activity is not sustainable because, not having sense of ownership; they are not willing to continue the activity without support from outside.
- Having increased productivity as an outcome, soil improvement through making compost tends to be appreciated by villagers. On the other hand, it is difficult to introduce activity for prevention of soil erosion because negative impact by soil erosion has not been recognized by villagers at present.
- Villagers tend to show quick response to specific techniques for agricultural production, it is rather difficult for them to understand or analyze such issues as overall farm management, linkage among various activities within regional farming, and resources recycling.
- As for activity of marketing program, it is recommended to start from community market.

CHAPTER 4 LESSONS LEARNED FROM PILOT PROJECT AND FEEDBACK TO M/P

4.1 PROCESS/ PARTICIPATION EVALUATION AND FEEDBACK TO M/P

4.1.1 Flexible Learning Process

Lessons learned

Activities for construction of small check dams and bio-gas were created through ‘awareness’ in the learning process and study tours. Considering that local people gain sense of ownership and motivation, learning opportunity should be designed flexibly based on the local conditions of project sites and people’s needs. A flexible learning opportunity can make people’s activities more efficient, which may lead sustainability of activities. Through these processes, local people become self-reliant.

Suggestion to M/P

In the M/P implementation, it is required to provide learning opportunities based on the conditions of project sites and people’s development vision. Activity process should be designed flexibly so as to meet local needs.

4.1.2 Project Preparation and Site Selection

Lessons learned

Plan of operation of the pilot project has formulated in seven Tambon of four provinces. However, no activities conducted in Tambon Chom Phra of Nan province, and little was done in Tambon Thung Laeng in Phrae. Several reasons behind non- or less- implementation were reported. Firstly, the basic concept of pilot project such as learning process, self-reliance and making of local resources was not fully understood by villagers and Tambon staffs who expected provision of infrastructure based on their request as same as conventional government project. Tambon Chom Phra decided to desert pilot project before implementation stage. It was also due to lack of clear understanding of PLRO and coordinator who explained to villagers.

Even after commencement of pilot activities, in case of Tambon Thung Laeng and also in Nan province, personal relationship and favors of project staffs affect degree of support and frequency of coordination with villagers.

Lessons learned from this experience suggest necessity of project staff training to have common and clear understanding of concept, approach and objectives of the project using real situation cases. When a site for the project is selected, it is essential to obtain prior consent from villagers and Tambon staff on concept and approach which would apply to throughout project implementation.

Suggestion to M/P

- (1) Project field staffs, i.e. PLRO staffs and NGO coordinators, shall be trained before the site selection. Outside resources might be needed to assist and train PLRO and field staffs.
 - Lecture and brain storming on concept of M/P using real cases.

- Basic knowledge on farming system, natural resources management, and participatory approach to rural development
- (2) Site selection process shall include the following programs in order to have clear understanding of M/P
- Study tour to the pilot project sites implemented by this Study.
 - Introduction of pilot project activities with visual aid.

4.1.3 Participatory Monitoring and Evaluation

Lessons learned

The study team tried to introduce the 6 steps of monitoring process, as suggested in the draft monitoring guidelines. In practice, the people did not follow those steps. They never discuss reasons and review objectives of monitoring. They just practiced on trial of pilot activities right away. However they adopted “changes and new findings” as indicator.

During implementation, many farmers have recorded data sets associated with inputs and outputs arisen from their farm trials (i.e. crops after rice, kitchen garden, chili production, fish raising, pig raising ... etc.) in their note books, individually. For the group base activity such as fish sauce making, fertilizer making, household utensils making, information was normally recorded by one member of the group, on voluntary basis. Although record and data collection was very simple, they enabled to tell the others in terms of advantage and disadvantage of this practice in comparison to conventional system to the others. Normally this refers to reduction of household expenses/inputs costs and higher production/income.

Data collection is more complicated on activities related to natural resources management which contribute impacts on eco-system. However the people can observe and tell the story of change in comparison between before and after implementations. For example, villagers in Phrae found more diversity of wild plants, animal and more water that is available all year round after nearly 2 years of check dam construction. Similarity to the others, while villagers in Phitsanulok and Phayao could get water to utilize as tap water, villagers in Phayao indicated more acreage and number of farmers utilized water in the dry season.

Practice from the pilot activities showed that it is a hard work and time consuming to get people to understand the importance of measurements and data collection. The forms provided never be used and villagers preferred to record on their own style. People did monitoring by means of:

- Observation: Most of villagers observed the change and new findings derived from their trial all the time. Some had recorded and use as information to discuss with the others.
- Discussion: People always discussed within focus group and formal meeting.
- Recording: Activities implemented during a month had been recorded by the local NGO. Of each activity, narrative summary of its objectives, target group, process, and methodology, place/No. of participants, results, problems / constraints and remarks from observations were noted down. This information was used as input for final evaluation.

Villagers were asked to evaluate on planning / implementation process together with suggestions based on their judgment. They could tell stories and put the score for evaluation, referring objectives, gaining knowledge and happiness through activities. In the M/P implementation, it shall be emphasized the significance of monitoring and recording their activities.

Suggestion to M/P

Common understanding on monitoring purpose and method should be cultivated among villagers and facilitators before activity is practiced.

- Objective of the monitoring should be discussed
- Means of data/ indicator collection and recording method should be discussed and established.

4.2 CAPACITY ASSESSMENT OF STAKEHOLDERS AND FEEDBACK TO M/P

4.2.1 Coordination with Agencies Concerned

Lessons learnt

Although it is mentioned on planning purpose that cross-sectional organization of related agencies should be established for agricultural and rural development project, it is not easy to organize them into a workable organization in Thailand. However, technical and/or financial supports from related agencies and local network are indispensable for M/P operation. Then, it was planned in the pilot projects that agencies concerned would be asked to provide necessary supports in response to the needs arisen in the course of project implementation. As the first, villagers and participants made action plans under cooperation with coordinators. The action plans are included in necessary supports from agencies concerned, institutes and local human resources. Then, inputs of the supports were planned and implemented when needed. PLRO together with coordinator functioned as the coordinator among agencies concerned such as MONRE, LDD and especially TAO.

In order to realize coordination as mentioned above, related agencies have been invited in a various occasion in the pilot projects. Experience showed that it was productive to have participation from MONRE, DOF, DOL and Phayao Agricultural College, etc. Supports in the agriculture and livelihood improvement programs are provided from local human resources and related departments of provincial and Tambon offices. For natural resources management, officials from MONRE who have provided knowledge and skill on forest conservation have participated as a resource person. in Phayao, Phrae and Nan.

Officials from related agencies are expected to participate in M/P implementation as well as in the pilot projects. Especially, cooperation works with MONRE is essential for wider forest area conservation. Although LRAs are not under the control of MONRE, MONRE should recognize that natural resources management activities in LRAs are linked with wider forest area conservation since

the LRAs are adjacent to conservation forest and living people coexist with forest as frontline of forest conservation and management.

Suggestion to M/P

Coordination with agencies concerned should be established to secure sustainability of M/P operation. ALRO/PLRO should provide coordination system through the followings.

- Public relation on M/P
- Participation in related seminar and workshop
- Demonstration in the pilot projects

4.2.2 Implementation Organization

Lessons learned

The pilot projects were implemented by villagers, facilitated by NGO coordinators in coordination with PLRO, TAO, provincial agencies concerned, and the Study Team. JICA study team with ALRO/ATSAP monitored implementation progress of Project as a whole and give technical and financial supports to the implementation process.

Through the implementation, it is verified that the coordinator play a key role in facilitation and coordination between villagers and stakeholders. Therefore, it can be said that such coordinators are indispensable as facilitator when M/P programs/ components are implemented in target Tambon and villages. As a matter of fact, capacity, understanding and attitude of facilitator affected performance of each sector and Tambon a lot. Therefore, it is necessary to train and build-up capacity of facilitator at early stage of the M/P implementation. It would bring more effective M/P operation and its results.

PLRO is the key organization in management of M/P implementation and coordination with other agencies concerned at provincial level and TAO. However, existing human resources of PLRO might become constraint in future M/P implementation due to limited personnel who engages in rural development. Moreover, consistency of M/P implementation would be disturbed by regular alteration of personnel, which is common in government offices and experienced during the study period. Thus, it is recommended to have full-time governmental staff for M/P operation as Project Management Unit (PMU), otherwise employ consultant team or other outside resources to assist PLRO in full-time base.

Suggestion to M/P

- (1) For smooth and effective implementation of M/P of which its scale is larger than the pilot project, implementation organization consisted of full-time project staffs, such as Project Management Unit (PMU), shall be organized.
- (2) For smooth and effective implementation, facilitators shall be allocated.
- (3) Allocated project staffs and facilitators shall be trained in the course of the project implementation.

4.2.3 Capacity Building of Farmer Leaders

Lessons learned

Though coordinators play a key role in facilitation of implementation of M/P as it was in pilot project, they would leave the project area sooner or later after the project period. In order to achieve sustainability, farmer leaders, group leaders and potential youths shall be trained to be facilitator of various village level activities. During the pilot project, Training of Trainers (TOT) were provided twice to potential person from each pilot project area, but it was not enough to develop their capacity to become facilitator due to time limitation nearly end of the project. Same TOT program shall be built in the M/P implementation process over years, and On the Job Training (OJT) shall be provided by assign them as field workers to assist coordinators. It was happened in Phitsanulok and Phrae during pilot project period to certain extent.

Resource person and learning center shall be also trained to gain communication skill to teach others and exchange ideas.

Suggestion to M/P

- (1) In the course of project implementation of the M/P, training program shall be organized for farmer leaders, group leaders and potential youths
 - The concept of M/P with learning process
 - Basic knowledge and technology for promotion of activities in the three sectors
 - Improvement of facilitation capacity
- (2) Trained persons shall be incorporated into the project implementation organization as field worker.

4.3 OUTCOMES/ RESULTS EVALUATION OF ACTIVITIES AND FEEDBACK TO M/P

4.3.1 Natural Resources Management Plan

Lessons learned

(1) There are required collective activities to be led by local people and community.

It was verified that practiced component/activities were the performance which may direct toward to development targets, although the outputs may differ among the sites. Considering the results of the activities conducted, those of natural resources management plan were considered as public nature from which whole community members can get benefit, while those of sustainable agriculture development and livelihood improvement plans were considered to be choice in individual or household level. It was learned that the activities for natural resources management and conservation can be considered to require collective activities by local people and community.

(2) Collective activities can be created from ‘awareness’

Collective activities in which many local people participates, such as construction of small check dams, making firebreak line, reforestation, making rule and regulations for community forest

utilization and forest produce harvesting, could be created from the ‘awareness’ in which local people understand the relation with natural resources in and around their land and farming practice and livelihood. For example, water head conservation contribute to run-off water in dry season, and harvesting/ selling of forest produce linked with household economy, overuse of chemical fertilizer affected farmers’ health. Those collective activities brought from the ‘awareness’ linked with their daily farming activities could be easily expanded into the nearby communities. It can be said that activities which local people are aware of conservation and management can be established in their community.

(3) Cooperation with MONRE, TAO, activity leader and local people is required to promote the collective activities.

Many villagers participated in the collective activities as mentioned above, although these were the activities which may not bring direct benefit to them. This resulted from the existence of formal or informal leaders in the community. To promote collective activities, they were expected to act as a leader for them. They acted as interface between the administration such as PLRO, MONRE, TAO and villagers.

It is required to cooperate with MONRE and related organizations at the time when the collective activities are materialized in the sites. Timing and scale of the inputs/ supports should be arranged prior to concrete actions. Especially, in the sites where are in the conflict of conservation forest boundary, MONRE should intervene on this issue.

(4) Collective activities can be sustained through incorporation with Tambon Development Plan.

The activities, such as construction of check dams and making of firebreak line, are considered to be regular annual activities led by local people. These activities are required to continue regularly. In the pilot projects, those activities were materialized through financial supports from the Tambons and many people participations. Considering the activity process, it is considered that the collective activities can be incorporated into annual plan of the Tambon.

(5) Incentives be given to farmers for promotion of the activity ‘soil erosion prevention farming’.

The activity of ‘soil erosion prevention farming’ could not be materialized in the farm land, since it could not be motivated for farmers. Local people might hesitate to apply the activity in their farm since benefit from which activity can be obtained, is not clear. In order to promote soil erosion prevention farming, motivation should be given to farmers. It is obvious to understand that activities for which farmers conserve and manage in their land may lead to their benefit. LDD and related organizations should cope with this subject, and prepare the activity design based on the motivation.

(6) Collective activities grown from ‘awareness’ shall be expanded into other communities through repeat of study tour and learning.

The activity ‘construction of small check dams’ was expended into other sites through introduction of the case activity performed in Phrae in the stakeholder meeting. For some activities on forest valuations and medical plants, local intellectuals and study tour to progressive communities played

important roles for provision of knowledge and necessary information. Considering the above cases, awareness can be raised and expanded to other people through learning and exchange of opinion.

Suggestion to M/P

(1) There are required collective activities in which whole community member will cope with in natural resources management.

The activities such as ‘strengthening community forest management committee’, ‘setting of firebreak line’ and ‘putting conservation forest boundary’ are incorporated into M/P as the required and collective activities.

(2) In the M/P implementation, entry activities which may grow ‘awareness’ should be found.

Though entry activities shall be found based on local needs, ‘forest valuation’ is recommended as one of entry activities in any cases.

(3) Formal or informal leaders should be trained in the process of the project implementation.

Training program (subject; significance of the activities, cooperation with MONRE and TAO, communication with community members, cooperation with facilitators for activity design and operation) should be undertaken in the course of the project implementation.

(4) Continuation of the activities may be incorporated into Tambon’s annual plan.

The activities such as construction and maintenance of small check dams and making firebreak line may be incorporated into annual plan of Tambon. The Tambon shall provide financial support as annual regular activities.

(5) Cooperation with LDD should be required in the ‘soil erosion prevention farming’.

In order to promote ‘soil erosion prevention farming’, appropriate study tours and learning at the LDD’s demonstration farm and advanced farmers should be provided. LDD should show more concrete farming style with benefit and incentives for applying.

(6) Learning center and local resources found in the pilot project shall be utilized in M/P implementation.

Learning center and local resource person found in the course of the pilot project implementation can be utilized continuously for the M/P implementation, e.g. community forest management network in Phitsanulok, community forest management model village in Nan, advanced communities coping with natural resources management in Chaing rai and Chaing mai. Monks are also considered to be resource person in the activities ‘forest conservation spirit ceremony’ as the case of Nan.

4.3.2 Livelihood Improvement Plan

Lessons Learned

(1) Activities for expenditure cutting are practical.

It is common that new income generation activities are unstable at the beginning. Through the pilot project, it was learned that unnecessary expenditure reduction was very effective for livelihood improvement, and production of daily commodities was practiced. As this activity, which was widely expanded to other areas without any difficulties, proved clearly, it was a very practical activity

(2) Feeling of “happiness” is a key factor for continuity of the activity.

It is a key factor for continuity of an activity whether those who participate in the activity feel happiness or not. In cases of two activities, production of daily commodities and kitchen garden, people felt happy and solidarity through getting knowledge and practices. This indicates that feeling happiness is a vital factor for continuity and expansion of group activities.

(3) Practitioners can be resource persons for activity expansion.

As the activities of production of daily commodities and bio-gas, those who participated in activities can be resource persons for workshops and/or training in other areas to share their experiences with other people and expand their knowledge to others.

Suggestion to M/P

(1) To implement the M/P, the expenditure reduction activity can be an entry activity.

To start the activity, it is promoted to keep household accounting book. In case of production of daily commodities, three points, namely utilization of local resources, marketing after value addition, and marketing activities at community and/or tambon levels, are important for successful results.

(2) It is important to hold periodical meetings where groups learn their own experiences each other.

For livelihood improvement, it is crucial to provide opportunities to learn each other, exchange opinions, and work together in order to feel happiness.

(3) Practitioners shall work as resource persons to expand fruitful results.

It is significant to incorporate those who participated in the successful activities such as production of daily commodities and bio-gas into resource persons of workshops/training in other areas.

4.3.3 Sustainable Agriculture Development Plan

Lessons Learned

(1) Learning with familiar samples is necessary to understand, try and practice sustainable agricultural farming.

People understood that low cost agricultural production system utilizing locally available materials is effective to stable household income through the pilot projects. However, it is not easy to change the conventional farming practice, which needs many resources from outside. To realize sustainable farming system, familiar and successful examples and long-term learning processes are necessary.

(2) Organic farming is a good entry point for sustainable agriculture development,

Through the pilot projects, it was difficult for people to fully understand the concepts of sustainable

agricultural system as holistic system, but organic farming was understood and practiced. For instance, organic crop production (rice and maize) and organic swine production were practiced, and production cost comparisons of organic one and conventional systems indicated benefits of organic systems. Because they are still at trial stages, more cropping seasons and/or periods are necessary to have firm results and establishment of organic production systems.

(3) Locally available networks are effective to learn sustainable agriculture.

Instead of governmental organizations and staff, locally available networks such as advanced farmers, universities/colleges, are effective for people to learn sustainable agriculture, as the case of organic farming activity proved. These locally available networks are operative for people even if this Study be terminated.

(4) Marketing activities, long-term learning processes and follow-up activities are necessary.

Because it is rather difficult for people to get new marketing channels outside their own communities, a component of community market development was proposed, and learning processes were provided. Since any activities were not done during the pilot project period, it is necessary to provide learning opportunities for a long term and careful follow-up activities until the components are realized.

Suggestion to M/P

(1) Learning centers and demonstration farms, which exhibit sustainable agriculture, should be established.

These learning centers are necessary for people to understand sustainable agricultural production system and its techniques near their own farmlands. In practice, those who do integrated agriculture should be found and set them as learning centers and demonstration farms to enable people to learn sustainable agriculture. Supports from ALRO and ATSAP are important to establish these centers and farms.

(2) Organic farming can be an entry activity for sustainable agriculture development.

Since IMO fertilizer production showed low production cost and high crop yield level, organic farming can be an entry activity for sustainable agriculture development.

(3) Learning centers, which were effective during the pilot project period, should be continuously utilized.

During the pilot project period, many learning centers were found such as Huay Hong Krai Project, In-Paeng network, Learning centers for sufficiency economy communities, Phayao Agricultural College, and local advanced farmers (chicken and swine). These learning centers and local resource person should be listed and utilized continuously. New practitioner should be incorporated into existing networks as resource persons.

CHAPTER 5 CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

The objectives of the pilot projects are (1) to analyze and evaluate verification of the M/P and to reflect lessons which are acquired in the M/P, (2) to implement capacity building about participatory development for communities and officers of related organizations at 7 Tambons in four provinces. The projects were implemented from May 2006 to March 2007.

Following the basic concept of the M/P, learnin process of people was emphasized when pilot projects were implemented, in order to achieve objectives. The draft M/P was verified from a point of view of activity process, participation, capacity evaluation of stakeholders, achievement evaluation of activities. Consequently, validity of the M/P was verified. A recommendation to utilize networks of local human resources was obtained during the verification. A recommendation to build an implementation structure for the M/P was prepared.

Implemented components/activities were analyzed. Effectiveness of some components/activities was confirmed. Meanwhile, effectiveness of some components was not confirmed in the short period of time. However, people thought that if people had continued and developed the activities, the objectives of the activities could be achieved. Thus, effectiveness of program/component was verified.

During the implementation process of the pilot project, it was clarified that people can plan and implement an activity, if necessary resource and funding were provided.

5.2 RECOMMENDATIONS

(1) Recommendations for “6.2 M/P Implementation method”

- There are required activities to achieve the natural resources management in and around the LRAs. When it is implemented, first, it is recommended to encourage people’s “awareness”, then, it is recommended to use that to connect the required activities.
- As a realistic activity for livelihood improvement of house holds, it is recommended to start “Organic agriculture ” and “Making daily commodities” as an entry activity, because it is effective. It is recommended to stabilize incomes from agriculture activities through “integrated farming” in a long period of time. It is required to integrate a learning opportunity in a long term and supports into the activity plan.
- It is important to pay attention to people’s “awareness” and “incentives” when activities are planned and implemented.
- When components/activities are continued/promoted/expanded, participants need to feel “Happiness”. That is very important.
- “Awareness” will be fostered through demonstration and/or exchange and sharing of on-going activities. Thus, it is recommended to utilize forum for learning formulated and developed in the pilot project for further expansion of program/ activities.

- “Learning Process” shall be planned flexibly according to situation of target area.
- Prior to finalize implementation area selection, stakeholders, especially formal and informal leaders at Tambon level, shall have common understanding and consensus on concept and approach to implement M/P.

(2) Recommendations for “6.3 Role of Stakeholders for M/P Implementation”

- Activities in Natural Resources Management Plan shall be implemented under cooperation among villagers, agencies concerned, TAOs and NGOs.
- TAOs are recommended to include such activities needs yearly implementation, e.g., small check dam construction and maintainance, firebreak line making, and etc., in annual Tambon plan, so as to secure budget to support collective activities with villagers.
- It is recommended that MONRE and PLRO shall cooperate in providing necessary support for planning and implementation of activities by villagers on “Reserve Forest Area Delineation”, “Community Forest Management”, and “Reforestation”, which include confirmation of boundary of conservation forest at site, provision of seedlings for reforestation, and permission of activities in conservation forest, among others.
- LDD and other agencies concerned shall provide applicable farming technology and appropriate learning opportunities for farmers to learn soil conservation and farming technology to prevent soil erosion.
- Leaders in villages, communities and TAO shall play facilitating role to encourage villagers to participate and promote activities.
- ATSAP and ALRO shall support to develop learning centers and demonstration farm for sustainable agriculture in order to promote sustainable agriculture development.,

(3) Recommendations for “6.4 Project Implementation Plan of the M/P”

- In case that scale of project would be larger than the pilot project, it is recommended to set up Project Management Unit (PMU) as project organization separating from ordinary organization of ALRO with full time staffs.
- In order to implement M/P smoothly, facilitators shall be employed in each province. For facilitation of activities at community level, field workers who support facilitators shall be recruited for each Tambon.
- Human resource development or training of PMU staffs, facilitators and field workers shall be implemented throughout process of M/P implementation.