

3. PROJECT CYCLE MANAGEMENT METHODS

3.1. METHODOLOGY

The key aspect of the participatory planning in the PCM has its origin in the Log-frame developed by the USAID in the sixties and has influenced subsequent project planning methodologies and semantics. In PCM the conceptual tool is combined with group dynamics and communication techniques. GTZ has slightly modified the log-frame, turned it into Ziel Orientierte Projekt Planung (ZOPP)¹, has made the use of ZOPP mandatory for all projects. The Foundation for Advanced Studies on International Development (FASID) of Japan noted the usefulness of the ZOPP methods in increasing transparency of Japan's official development assistance and improving quality control in development projects.

The planning stage of the PCM is a tool for initial discussion, ranking and analysis of causes of problems and for preparing the formulation of objectives. It also used to review the logic of an existing project for evaluation purposes.

The PCM helps to gain insight into the causal relationships of forces or situations that affect the problematic situation which an intended project is supposed to address. On the basis of the finally agreed causal picture, the next step in PCM helps to formulate overall and specific objectives, which can subsequently be used to guide detailed project planning. A Project Design Matrix (PDM) can thus be drawn up which summarizes the intended project.

The out-put of the PCM is;

- A participatory analysis chart showing the group of beneficiaries
- A problem tree: structure of the causes, effects and subsequent effects of situations and forces,
- A hierarchical description of objectives, and
- A project design matrix.

The methods involves using cards, flip-over or other materials that allow visualization and manipulation of simple written statements (keywords), and by way of sub-group/or large group discussions, firstly analyze the potential beneficiaries and generate a broad consensus about problem related to those beneficiaries or group of beneficiaries. From this, an agreed picture of the causes and effects leading to the core problem is drawn up. Subsequently the hierarchy of problems is transformed into hierarchy objectives shown in an objective tree. After considering alternatives approaches to accomplish selected objectives, the project design matrix is drawn up which specifies intended results, activities and resources as well as operational indicators and assumptions.

Participants should have at least a global knowledge of the situation and should be willing and interested to brainstorm. A good facilitator, familiar with the logic of the exercise as well as the methods of stimulating and guiding wide ranging discussions is

¹ ZOPP is called in English Goal Oriented Project Planning (GOPP).

required. The organization(s) involved in the exercise should have a reasonably open mind about future interventions, otherwise the exercise becomes fictitious.

The benefit of the PCM is that it promotes open-minded and wide-ranging reflection on the causes of problematic situation. It forces participants to become more specific and logical in their broad and intuitive notions about these problems. The PCM helps to get a more specific, modest and realistic understanding of project objectives as opposed to making sweeping statements about unattainable and unverifiable goals.

3.2. APPLIED METHOD

The PCM as it was conducted in the 3 workshops consisted of three parts as follows;

- Conduct the PCM workshop at village level.
- Elaborate the PDM at provincial level.
- Feedback the outcome of the PDM to the villagers.

PCM workshop at village level

The PCM methodology as specified above was applied in the PCM workshop at village level. In the preparation of the workshop a selection of the participants was made to include representatives from the village authority and from farmers. It was recommended to include: village informal leaders, teachers, representatives from the Lao front for Reconstruction, from the Lao Women Union, from the Youth Organization, and from farmer organization leaders if there are any. As more 90% people living in the rural community are living from agriculture, all participants were farmers.

The "Task Force Team (TFT)" elaborated under the concept of the master plan to support the farmer community at field level has been involved in the workshop as facilitators and participants. A core of participants consisting of the TFT members and designed village authority members (chief or deputy chief of village) was selected for the PCM workshop organization and facilitation. The core participants are the ones that will be later participating in the PDM exercise. The composition of the TFT in each province is given in annex 4.

The process of the PCM was arranged to include transfer of knowledge to the TFT members on how to conduct a PCM workshop and on how to facilitate the process in order to promote open-minded and wide-ranging reflection on the causes of the problematic situation in the area. Therefore, during preparation sessions (mainly conducted in the morning), training on PCM techniques was provided to the TFT. The PCM sessions with the farmers were conducted during the afternoon in order to give time to the farmers to complete part of their farming activities².

During the PCM sessions, more attention has been given to visualize the situation. Pictures showing rural and agricultural activities from the former SRIDP³ project were utilized to define the major activities of the community and to define the major

² Harvesting, threshing of the wet season paddy, and in some areas preparations of seed-bed for dry season production.

³ ADB funded Strengthening and Restructuring Irrigation Development Project (SRIDP).

group of beneficiaries, which will be participating in the development of the community. To give a good atmosphere in the classroom sessions the moderator also initiated games, traditional story tales and chanting.

The PCM exercise in the village took place during three days with; day 1 for participatory analysis, day 2 for problem analysis, and day 3 for objective analysis.

PDM at PAFSO

After the completion of the PCM, a PDM session was conducted at the PAFSO of each office. Additional people were invited to join the PDM exercise in order to give additional technical input to the process. The core participants and additional "subject matter specialists"⁴ from PAFSO participated in the PDM.

The PDM session was moderated in the way to verify and to establish a convincing logic between the overall goal, project objectives, out-puts, activities and resources. The project design matrix was elaborated from the information provided by the PCM and by developing a clear conceptual framework from which specific decisions can be derived to plan and organize a realistic project. The PDM exercise took 2 days. In total 5 PDMs were elaborated for the 3 F/S areas.

Feed-back the outcome of the PDM

After the completion of the PDM, the study team summarized the findings and data from the PCM and PDM exercise. A final touch is made and the PDMs are processed. The final PDMs are then discussed again with the TFT at the district and then with the farmers in each area in order to get necessary feed-back that is needed from the farmer community.

During the feedback activities, local theater plays and traditional music performance were utilized to explain the components of the future project to the villagers. The National Theater and Comedy Troupe was contracted for this purpose. A script (see annex 5) was prepared and the play was presented as part of the feedback meeting in each F/S area.

4. PROCEEDINGS AND OUTCOMES

4.1. VANGKHONG, HINBOUN DISTRICT.

4.1.1. BACKGROUND

Vangkhong area has been selected as the F/S Model Area for Khammouane Province. The model to be developed is for small pumping scheme newly constructed by farmers.

The area consists of the area of one village "Ban Vangkhong", which is located on the Hinboun River 7 km far from road No.13, about 33 km north of Thakhek and 26 km south of Songhong the district capital. The village has a total land area of 4,552 ha.

⁴ Livestock and fisheries, forestry, and agriculture planning.

The agriculture land represents 52 ha and there is presently no irrigated area. The village has about 50 ha of brush land that will be possible to clear as agriculture land and to irrigate. At the time of the reporting, the government has installed one pump station and villagers have dug part of the irrigation canals.

The village was established around 1944 and has actually 47 households and a total population of 246 inhabitants⁵. The main ethnic group is Lao Kaleung a branch of the Lao Phouthai ethnic. The population of the village is young with 48.4% in the age between 1 and 14 year old.

The main activities of the villagers are farming and fishing with 68.3% of the population directly involved in agriculture production. The main source of income of the villagers is paddy. The secondary source of income is animal husbandry and fishing on the Hinboun River. Due to the lack of irrigation and low potential for wet season production due to floods, about 45 households (or 95.7%) have not enough staple food for the whole year.

The feasibility study area description is given in annex 1.

4.1.2. PROCEEDINGS

The PCM workshop for Vangkhong F/S Model Area was conducted from the 29/11/99 to the 3/12/99. The feedback meeting with the farmers were conducted on 29/12/99.

The first part of the workshop on 29/11/99 was:

- The opening address by Mr. Kham Oui, Member of the Hinboun District Administrative Committee, Chief of the Commerce and Tourism Service Office.
- The presentation of Mr. Oudet Souvannavong about PCM methods and the rules of the PCM workshop.
- Participation analysis: identification of target groups and group analysis.

The second part of the workshop on 30/11/99 was the problem analysis of the causes and effects of existing problems.

The third part of the workshop on 1/12/99 was the objective analysis.

The PDM for Vangkhong F/S model area was conducted on 3/12-4/12/99 at the PAFSO in Thakhek as follows;

- The opening address by Mr. Sivisay Southalath, Chief of the PAFSO of Khammouane province.
- The presentation of Mr. Oudet about PDM methods and rules.
- The elaboration of the PDM for rice production.
- The elaboration of the PDM for animal husbandry.

⁵ From December 1998 socio-economic survey

The feed back meeting for Vangkhong was held on 29/12/99 as follows:

- Opening by the Chief of the District Cabinet.
- Presentation of the PDM for rice promotion by the chief of village
- Presentation of the PDM for animal husbandry by the deputy chief of village
- Presentation of role and responsibility of each parties by representative from TFT.
- General discussion with farmers
- Closing address by the Chief of PAFSO Khammouane.
- Presentation of the play by the Vientiane Story Caravan.

4.1.3. OUTCOMES OF THE WORKSHOP

a). *Target groups*

In Vangkhong the following beneficiary groups were identified;

- Rainfed paddy group
- Cattle raising group
- River fishing group
- Gardening – vegetable group

There are no potential opponents as rainfed paddy group and cattle raising group consist of the same people.

Formal community leaders consist of the village chief and his deputies with all of the village formal organization, the Chief of the Lao Front for reconstruction representing the village's mass organization including the Lao Women's Union and the Lao Revolutionary Youth Organization at village level.

Informal community leaders are 2 elders who are also member of the Lao Front for Reconstruction and the venerable monk of the village pagoda.

b). *Problems*

The core problem identified by the workshop is **"People have not enough rice to eat"**. The situation is that the villagers who are all farmers have rice insufficiency for about 3 to 4 months in a year. This is due to floods generated from the Hinboun River and the low agriculture productivity due to low investment and low technology application. The causes of the problems identified by the workshop were;

There is regular flood destroying the production and yield of paddy since 1985.

- Farmers are reluctant to produce due to flood

Agriculture extension is lacking.

- Lack of technical assistance
- Lack of improved seeds
- No soil analysis
- Lack of relation between extension and farmers

Pesticide is not available or too expensive

Fertilizer is not available or too expensive

Mechanical equipment is too expensive

- Farmers are lacking funds
- Farmers are afraid to borrow from APB
- Farmers have limited knowledge about credit
- Farmers are afraid not to be able to return loan
- Lack of collateral for borrowing
- No credit group is formed

There is no land clearing

- Interest in clearing land is low
- Farmers are lacking funds for land clearing

Irrigation not installed yet

- Lack of funds for irrigation canals
- Farmers dug low quality irrigation canals
- WUO is not established yet
- Farmers are too depending on government.

Population is increasing

- Lack of family planning

The problem tree and objective tree of Vangkhong is in Annex 1.

c). *Objective Analysis*

By analyzing the problems specified in the problems tree, the participants identified the main objective to solve the core problems is to “develop paddy production”. By linking the problem cause together, the workshop identified the following approaches for solving the problems.

Agriculture extension improvement approach with the objective:

- To promote the utilization of improved seeds
- To apply soil improvement techniques
- To promote the application of fertilizer
- To promote the application of pesticide
- To promote mechanization of production
- To improve the technical assistance and relation between DAFSO and farmers.
- To improve existing credit system.

Open new land for production approach with the objective:

- To clear existing brush land into paddy fields.

Irrigation development approach with the objective:

- To develop irrigation system
- To develop and strengthen water management system and WUO

d). Project Design Matrix

Two design matrixes were elaborated for Vangkhong. The first matrix "Rice Promotion" is elaborated to solve the problem of rice deficit in the village. The second, "Animal Husbandry Promotion" has been elaborated with the aim to generate additional incomes for the villagers.

d.1). PDM - Vangkhong Rice Promotion Project

The goal and objectives of the project is to increase the productivity, yield and area of rainfed and irrigated paddy in order to provide enough rice to eat and to sell for the overall population of the village.

The outputs of the project to be obtained in 5 years are:

- Irrigation system is established and could irrigate 60 ha of paddy field during dry season
- There is a strong WUO for the O&M of the scheme
- Credit groups are formed and receive enough credit from APB
- Paddy production is practiced according to appropriate techniques.
- Production groups are formed to receive enough technical support from DAFSO and other agencies
- Paddy buying and selling groups are established to support the marketing of rice.

The main activities defined by the participants are:

Activities related to the improvement of rice productivity and yield

- Training of farmer organization and farmers
- Establish model farmers
- Training of model farmers
- Establish production groups
- Training of production groups
- Introduction of improved seeds
- Soil suitability analysis
- Establish credit groups
- Training of credit groups
- Establish selling and buying groups
- Training of selling and buying groups

Activities related to irrigation and land development

- Construct irrigation system head works
- Construct irrigation canals and structures
- Opening new land (60 ha) by land clearing
- Provision of long term credit for land clearing and irrigation
- Establish and strengthen WUO

The total inputs in term of funds and contribution by labor and local materials is estimated to 1,145,000,000 KIP (or 150,660 US\$). The major part of the budget (98%) is for irrigation development.

d.2). PDM - Vangkhong Animal Husbandry Promotion Project

The goal of the project is increase the livestock and fisheries activities of the villagers to provide enough food and to generate enough incomes. The purposes of the project will be to develop; livestock and fisheries as well as veterinary practices in the village.

The expected out-puts are:

- Population of cattle has increased
- Population of pigs has increased
- Population of poultry has increased
- Fish production has increased
- Villagers vaccinate their animals and follows recommendation from village veterinarian.
- Credit groups and production groups for livestock and fisheries are formed.

The main activities of the project are:

- Establishment of livestock production groups
- Training in livestock raising
- Training of village veterinarians
- Establishment of village drug stocks
- Establishment of fish production groups
- Training in fish culture
- Establishment of credit groups in relation to above production groups
- Training about APB credit
- Construction of 3 communal fish ponds
- Construction of 2 river basket to breed natural fish in Hinboun River
- Provision of fingerlings

The inputs of the project are estimated to 38,500,000 KIP (or 5,060 US\$).

The preconditions set for the two projects is the participation of the villagers in the project by considering their willingness to contribute and to borrow money from APB. The detailed matrixes of the two projects specified above are shown in annex 1.

4.2. PHONTHAN, XAIPHOUTHONG DISTRICT.

4.2.1. BACKGROUND

Phonthan area has been selected as the F/S Model Area for Savannakhet Province. The model to be developed will be for communal gravity irrigation management that includes management of watershed area by farmers.

The Phonthan are is located about 14 km west from the road No. 13, at about 55 km south of Savannakhet and 15 km far from Thadan the district town. The area represents a community of three villages (Ban Phonthan, Ban Nakham Tai and Ban Nakham Nua). The total land area allocated to the 3 villages is 2,157 ha that comprises of 520.6 ha of agriculture land with 54.6 of irrigated land.

Phonthan village, which was erected in year 1673, is considered as the source of the community. The population of the 3 villages is from the same ethnic minority group. The main activity of the community is farming with 53.6% directly involved in agriculture production. The remaining percentage is school children that are also considered as supplementary labor in the household's farming activities. The main sources of income of the villagers are from paddy, from animal husbandry and from some cash crops (watermelon, bananas and maize). There is insufficiency in rice in 46 households (11%).

The feasibility study area description is given in annex 2.

4.2.2. PROCEEDINGS

The PCM workshop for Phonthan F/S Model Area was conducted from the 6/12/99 to the 10/12/99.

The first part of the workshop on 6/12/99 was;

- The opening address by Mr. Bounpheng, Member of the Xaiphouthong District Administrative Committee, Chief of the Agriculture and Forestry Service Office.
- The presentation of Mr. Oudet Souvannavong about PCM methods and the rules of the PCM workshop.
- Participation analysis: identification of target groups and group analysis.

The second part of the workshop on 7/12/99 was the problem analysis for paddy production and animal husbandry. The problem tree for livestock and fisheries was elaborated by the TFT and chief of villages during the morning session. The problem tree for paddy production was done during the afternoon session with representative from the 3 villages.

The third part of the workshop on 8/12/99 was the objective analysis of the problems pertaining to paddy production and livestock and fisheries.

The PDM for Phonthan F/S model area was conducted on 9/12/99-10/12/99 at PAFSO in Savannakhet as follows;

- The opening address by Mr. Bounthiem, Deputy Chief of the PAFSO of Savannakhet province.
- The presentation by Mr. Oudet about PDM methods and rules
- The elaboration of the PDM for paddy production
- The elaboration of the PDM for livestock and fisheries.

The feed back meeting with farmers was held at the Phonthan village on 28/12/99 as follows.

- Opening address by the Chief of the District Cabinet
- Presentation of the PDM by the Chief of Nakham Tai village
- Presentation of role and responsibility of each parties by representative from TFT.
- General discussions
- Closing address by the Deputy chief of PAFSO Savannakhet.
- Show by Vientiane Story Caravan.

4.2.3. OUTCOMES OF THE WORKSHOP

a). *Target groups*

In Phonthan area the following target groups were identified

- Rainfed paddy group
- Irrigated paddy group
- Cattle raising group
- Cash crops group

The opponents to the paddy groups and cash crops group is the cattle-raising group as cattle are raised freely without enclosure in the area. There is also conflict between irrigated paddy group and farmer group that has no irrigated land.

Formal community leaders consist of the chief of Nakham zone, the chiefs and deputy chief of the 3 villages with all of the village formal organization including the formal mass organizations.

Informal community leaders are the spiritual elders (called Khouan Cham) of Phonthan village and the venerable monk of Phonthan pagoda. The spiritual elder of Nakham village Nua village and the venerable of Nakham pagoda are also important leader in the community.

b). *Problems*

b.1.) *Problems related to paddy production.*

The core problem identified by the workshop is “**there is not enough water for production**”. The situation described by the participants is that during the wet season there is drought that are hampering the yield of rainfed paddy, and there is not enough irrigation water to supplement the production of the wet season and expand the irrigated paddy production during the dry season. Therefore, there is low agriculture productivity that is mostly related to the low input of agriculture supplies, limited irrigated water, and low technology application including water management and cropping techniques.

The causes of the problems identified by the workshop were:

The irrigation system is not functioning according to standard

- Canal and structures are in bad conditions
- In some areas there is no canals
- There is no maintenance of canals
- The reservoir dike is small and narrow
- The reservoir could not keep enough water
- Water gates are in bad shapes and could not keep water
- Limited water resource due to former deforestation.
- Existing WUO is weak
- No proper water management
- There is continuous flow and a lot of water losses
- WUO regulation are not applied

Farmers are lacking labor for intensive production

- Farmers have no funds to pay labor
- Farmers do not want to borrow money from APB for labor
- Hired labor is getting expensive
- Farmers are migrating to town after the wet season harvest
- Young people are migrating to town
- Other sectors are offering better income.

Farmers are lacking funds

- There is limited income generation
- There is limited income capital (in cash as well as in assets)
- Farmers have limited knowledge about credit
- Farmers do not know where to borrow money
- APB service unit is far away from the area
- Farmers have difficulties to get loan
- APB loan in kind is late
- Farmers think that APB interest rate is too high and time to give back too short
- Farmers are afraid to borrow money due to uncertainty in production.

Farmers are lacking technical support

- Limited extension activities from DAFSO
- Limited coordination between DAFSO and farmers
- Lack of training and demonstrations
- DAFSO is lacking budget

Farmers do not use mechanical equipment

- Equipment are too expensive
- Shops selling equipment are too far
- Farmers are afraid to borrow money due to uncertainty in production.

Farmers are lacking improved seed

- The market for improved seed is limited
- The seed center is too far away
- The seed center do not have enough seed
- Private improved seed are expensive

- Farmers are afraid to borrow money due to uncertainty in production.

Farmers are lacking pesticide

- Shops selling pesticide are remote
- Farmers do not know the use of fertilizer
- Farmers are afraid to borrow money due to uncertainty in production.

Farmers are lacking fertilizer

- APB was the sole provider of fertilizer
- APB fertilizer do not arrive on time
- Farmers could not use the fertilizer because time is not appropriate for crops
- Quantity of fertilizer is not applied correctly
- Farmers are afraid to borrow money due to uncertainty in production.
- Food Supply Company send fertilizer but the price is unknown
- Farmers are confused between APB and FSC supplies.

The problem tree and objective tree related to the above subject is shown in Annex 2.

b.2) Problems related to livestock production

The core problem identified for livestock production is “**Villagers are traditionally raising their animals**”. The situation defined by the participants (TFT members and chiefs of villages) is that cattle are raised freely without enclosure near some water pond far away from the village. The animal are not taken care of nor vaccinated, hence are attacked by disease or got stolen. In the village small animals (pigs and poultry) are also raised freely without any pigsty and hen house. Therefore, villagers could not catch them easily to get them vaccinated. Small animals are also subject to bad diseases that took lives of many animals. Thus, decreasing their population and discouraging people to breed and raise them.

The causes related to the above problem are:

Animal care and disease prevention is lacking

- Villagers do not vaccinate their animals
- The village is lacking veterinarian equipment
- Drug could not be stored in the village
- Drugs loss quality and effects due to bad storage
- Drugs are expensive for villagers
- Stores selling drugs are located far away from village
- No vaccination boxes for cattle and pigs
- Villagers have no money to buy drugs
- There are no animal enclosures
- No household cattle house
- No household pigsty
- No household hen house

Villagers are lacking knowledge in animal raising

- Lack of training
- There is not enough extension staff
- Extension staffs are not doing their job properly
- DAFSO is lacking budget
- Villagers do not want to change their traditional habit
- Villagers are lacking skills in animal raising
- Villagers are breeding their animal naturally
- Villagers are not collecting breeding specimen
- Villagers are killing too many animals during festivity.

There is no animal raising organization

- No animal production group
- Animal raising is very disorganized

There is not enough grazing land for cattle

- There is limited land with water pond for grazing
- Actual grazing area is far from the village
- Villagers have no fund to open new grazing land
- Grazing land diminish because it is used for other purpose
- There is land conflict between crops, housing and cattle

Villagers lack of funds

- Villagers have no capital
- Villagers are reluctant to borrow money for animal raising because of high risk
- Villagers think that bank interest is too high and time to return the loan is too short
- Villagers have limited knowledge in credit
- APB has no credit for animal husbandry in the region
- There is high risk of non-performing loan
- DAFSO is lacking funds to give proper extension
- There is limited support to livestock and fisheries

The problem and objective trees related to the above problems are shown in Annex 2.

c). *Objective Analysis*

c.1). *Objective Related to Paddy Production*

By analyzing the problems specified in the paddy production problems tree, the participants identified the main objective to solve the core problems is to “improve the management of water resource and paddy production”. By linking the problem cause together, the workshop identified the following approaches for solving the problems.

Irrigation improvement approach with the objective:

- To improve existing irrigation system
- To improve existing water management
- To strengthen WUO

Revitalization of farmers funds and capital approach with the objective:

- To develop additional income generating activities
- To develop communal capital funds
- To improve existing credit system

Farmer support improvement approach with the objective:

- To improve technical support of DAFSO
- To promote the utilization of improved seeds
- To promote the application of fertilizer
- To promote the application of pesticide
- To promote mechanization of agriculture production
- To develop marketing out-let

c.2). Objectives related to animal husbandry

By analyzing the problems specified in the paddy production problems tree, the participants identified the main objective to solve the core problems is to “enhance the villager to raise their animal according to appropriate techniques”. By linking the problem cause together, the workshop identified the following approaches for solving the problems.

Disease prevention approach with the objective:

- To develop the animal vaccination network at village level
- To develop drug storage facilities
- To promote the establishment of enclosure for animals.

Knowledge development in animal raising approach with the objective:

- To develop and strengthen veterinary and livestock-fisheries extension of DAFSO
- To change traditional habit and attitude in animal raising
- To establish and strengthen animal raising groups and organizations
- To develop grazing land for cattle

Revitalization of village funds for animal raising approach with the objective:

- To develop communal funds for animal raising
- To improve existing credit system

d). Project Design Matrix

d.1) PDM – Phonthan Rice Promotion Project

The goal of the project is the overall populations of the 3 villages located in the area have produced surplus rice to sell. In relation to above development the living conditions of the people have been improved.

The purposes of the project are; to improve existing irrigation system, to improve existing production support services, to develop and generate funds for infrastructure and farm finance, to improve existing production organization, and to improve the market and selling of paddy.

The expected outputs defined by the participants are:

- the reservoir of Koutapo has been improved
- the canal system of the irrigation scheme has been improved
- extension activities are well implanted at village level
- contact farmers (or village technician) are formed and trained
- model farmers are established and demonstration implemented
- farmers are applying correct amount of fertilizer in each production season
- farmers have knowledge and skill in pest management and control
- farmers use improved seeds
- farmers use mechanical equipment in their production
- farmers have knowledge and skills in maintenance and repair of mechanical equipment
- Short term credit and long term credit is provided to farmers by APB
- Farmers have knowledge about credit
- Farmers know how to use credit
- Village development funds have been developed
- Funds for infrastructure have been provided by the government
- WUO has be strengthened
- Water management regulation has been established and applied by farmers
- Production groups have been established and strengthened
- Buying and selling groups have been established for the marketing of rice in the area.

The main activities of the project are:

- increase the level of the dike by 1.50 m
- construct and repair gates and drains
- construction of canals and structures
- repair access road
- establishment and training of contact farmers
- increase number of model farmers
- establish and strengthen production groups
- training of farmers
- provide improved seeds
- seed propagation
- provision of pesticide
- establishment of village pesticide funds
- improve the fertilizer supply system including credit by kind
- establish and strengthen credit groups
- training credit groups in credit and finance
- establish VDF in coordination with water management regulation
- collect VDF
- develop and strengthen the WUO
- develop water management system
- establish internal regulation of WUO
- training of WUO committee and members
- establish and strengthen buying and selling groups

- construct storage facilities for paddy
- construct sun drying facilities
- establish a market center

The inputs of the project is estimated to 1,545,000,000 KIP (or 203,300 US\$). In the estimation 64% of the inputs will be for irrigation improvement.

The participants set a large contribution to be done by the farmers (at least 30% to be contributed by the villagers). Therefore, it is a precondition that the project will be feasible if the villagers are willing to contribute to the project.

d.2) PDM – Phonthan Animal Husbandry Promotion Project

The goal is the villagers are producing livestock and fisheries according to techniques and are producing enough food, capital, and commodity to sell in order to generate enough income.

The purposes of the project are; to enhance the villagers to breed and maintain their livestock properly, to develop and strengthen animal husbandry production organization, to develop cattle raising and grazing areas, to develop small animal raising (pig and poultry), to develop fisheries, and to develop and strengthen extension and veterinarian support to farmers.

The outputs of the project are:

- Population of cattle has increased
- Population of pigs has increased
- Population of poultry has increased
- Fish production has increased
- Cattle are raised in improved grazing areas
- Pigs and poultry are raised in animal enclosures
- Villagers vaccinate their animals and follows recommendation from village veterinarian.
- Credit group and production group for livestock and fisheries are formed

The main activities of the project are:

- Training in animal husbandry to farmers
- Establish model farmers and develop animal raising demonstration
- Training model farmers
- Establish animal production groups
- Training to animal production groups
- Establish drug storage in 3 villages
- Establish animal vaccination funds in 3 villages
- Improve grazing areas for cattle
- Introduction of improved variety for cattle
- Promotion of household fish culture
- Fish fingerling production
- Fish production in basket in the irrigation reservoir.

The inputs estimated for the project amount to 46,460,000 KIP (or 6,110 US\$).

Preconditions are set according to the willingness of the villagers to contribute and borrow money from APB.

The detailed PDMs of the two projects for Phonthan F/S model area are shown in Annex 2.

4.3. THONGHARB-NAKHUA AREA, PAKKADING DISTRICT.

4.3.1. BACKGROUND

The Thongharb-Nakhua area has been selected as the F/S model area for Bolikhamxay province. The model to be developed for micro basin water management of small tributaries of the Mekong River.

Thongharb-Nakhua area consists of an area covering five villages located approximately to the road No.13, 70 km south of Paksan and 15 km south of Phonsy the district town. The area is located on the upper Nam Dua River basin area. The Nam Dua drains to the Namkhou an affluent of the Nam Thone River that is flowing into the Mekong River.

The area represents a community of five villages (Ban Thonghab, Ban Nakhua Nok, Ban Nakhua Nai, Ban Nadua, and Ban Nahin). The total land area allocated to the 5 villages is estimated to 12,232 ha with the total agriculture land evaluated to 727.8 ha. The area has about 150 ha of irrigated field most of the field is located in Ban Thongharb with small portion in Nakhua Nai, Nakhua Nok and Nahin.

Thonharb and Nahin were established around 1700s. By considering the ethnic provenance, Thongharb is considered as the source for the community living in Nakhua Nai and Nakhua Nok. At Nahin, the ethnic group is Phouthai and is different from the other villages. Nam Dua village is new and there is diversified ethnic composition in the village. The population of the 5 villages is young with 35% aging from 1 to 14 year and 25.7% aging from 15 to 45 year.

The main activity of the community is farming with 55.6% directly involve in agriculture. The main source of income is paddy, but there are also some other important income from the exploitation of minor forest products (non-timber products) and animal raising. The income of the villagers is low and there is about 162 households (35.7%) that have not enough food for the whole year.

The area situation is shown in Annex 3.

4.3.2. PROCEEDINGS

The PCM workshop for Thonharb-Nakhua F/S Model Area was conducted from the 13/12/99 to the 16/12/99 in Ban Nakhua Nai and Ban Thongharb. The feedback meeting with the farmers was conducted on 30/12/99.

The first part of the workshop on 13/12/99 and 14/12/99 was:

- The preparation of the workshop with the TFT and village chief by Mr. Oudet
- The opening address by Mr. Somsy, Member of the Pakkading District Administrative Committee, Chief of the Agriculture and Forestry Service Office.
- The presentation of Mr. Oudet about PCM methods and the rules of the PCM workshop.
- Participation analysis: identification of target groups and group analysis.

The second part of the workshop on 14/12/99 was the problem analysis for paddy production.

The third part of the workshop on 15/12/99 was the objective analysis of the problems pertaining to paddy production and the summary of the PCM exercise.

The PDM for Thonharb-Nakhua was conducted on 16/12/99 at PAFSO in Paksan as follows:

- The presentation by Mr. Oudet about PDM methods and rules
- The elaboration of the PDM for paddy production
- Summary and closing by Mr. Oudet.

The feed back meeting with farmers was held at the Nakhua Nai village on 30/12/99 as follows.

- Opening address by the Pakkading District Governor
- Presentation of the PDM by the Chief of Nakhua Nai village
- Presentation of role and responsibility of each parties by representative from TFT.
- General discussions
- Closing remark by the Pakkading District Governor.
- Show by Vientiane Story Caravan.

4.3.3. OUTCOMES OF THE WORKSHOP

a). *Target groups*

In Thongharb-Nakhua area the following target groups were identified

- Rainfed paddy group
- Irrigated paddy group
- Cattle raising group
- Minor forest product group

There are no direct opponents to the major target group (paddy group). But there is conflict between irrigated paddy group and farmer group that has no irrigated land as well as up stream and down stream irrigated paddy groups.

Formal community leaders consist of the chief of Nam Dua zone, the chiefs and deputy chief of the 5 villages with all of the village formal organization including the formal mass organizations.

Informal community leaders are the spiritual elders (called Thao Khoun) of each village and the venerable monk of Nakhua Nai pagoda.

b). Problems

The core problem for paddy production that was identified by the participants is “**Paddy Production is Low**”. The situation as described by the problem tree is that rainfed paddy does not yield because of floods and lack of intensive cropping. During the dry season, the irrigation system established by the government cannot supply enough water.

The main causes of the problems are:

Appropriate techniques were not applied

- There is no proper paddy field land leveling
- Lack of labor for land preparation
- Lack of mechanical equipment for land preparation
- Lack of technical assistance
- Limited relation between extension officers and farmers
- Fertilizer are not applied properly
- Fertilizer is not available and too expensive
- Credit in kind for fertilizer do not arrive on time
- Pesticide are not applied
- Farmers have no knowledge in pesticide
- Pesticide is not available and too expensive

Farmers are lacking funds

- Farmers are afraid to borrow money from APB
- Farmers are afraid not to be able to return loan
- Farmers have limited knowledge about credit
- Some farmers cannot receive new loan because they are in dept with APB
- Farmers have limited income generating activities
- Income from paddy is not covering the cost for production
- Operational costs of fuel pumps is high
- Price of agriculture input supplies is high

The relation between farmers and authority is not good enough

- Village authority is weak
- Lack of coordination with government agencies
- Development project are done with little consultation with farmers
- Farmers still depending on government support
- Farmers do not want to take responsibilities
- Village authority lack knowledge in development
- Organization for production is wrongly organized

- Limited support from government agencies
- No transfer of responsibility between village organization and agencies concerned concerning irrigation pump schemes.

Irrigation water is not enough

- Weirs are poorly designed and constructed
- Supervision of construction was done properly
- Temporary weirs constructed by farmers could not stock enough water
- There is not enough water to irrigate all command area
- Irrigation canals constructed by farmers cannot supply water equitably
- Canal constructed with limited survey and design
- Canal level are lower than paddy field level
- There is a lot of water losses
- Operational cost of diesel pump is very high
- Fuel cost is high compare with electricity
- Pumps need repairs and there is no mechanic
- WUO are not properly established
- In most of the pump station there are no WUO
- Village authority has limited knowledge in forming WUO
- WUO committee is weak
- WUO has limited knowledge in water management
- Only farmers located in headwork get water
- Many farmers did not transplant
- Many farmers harvested with low yield
- Farmers loss money and interest in irrigated paddy
- Farmers could not pay back loan to APB

The above problems are shown in the Thongharb-Nakhua problem tree in Annex 3.

c). *Objective Analysis*

By analyzing the problems specified in the problems tree, the participants identified the main objective to solve the core problems is to “increase paddy production”. By linking the problem cause together, the workshop identified the following approaches for solving the problems.

Application of appropriate technology approach with the objective:

- To develop land preparation techniques including labor management
- To promote the application of chemical and biological fertilizer
- To promote the application of pesticide

Revitalization of farm finance approach with the objective:

- To improve and develop APB credit system.

Improvement of government agencies and farmers relationship approach with the objective:

- To improve the coordination between DAFSO and Village Authorities in planning and implementing development projects.

- To develop bottom up planning with participation of the majority of farmers.
- To transfer irrigation management from the government to the farmers.

Improvement of rural infrastructure approach with the objective:

- To improve existing irrigation system
- To develop appropriate water management system with the establishment and strengthening of WUO
- To develop access road.

d). PDM Thonharb-Nakhua

Only one PDM for rice promotion was elaborated during the workshop. The goal of the project is the overall populations of the 5 villages have produced surplus rice to sell, therefore the living conditions of the people in the area have been improved in relation to the development. Another goal is the area has been developed as a complete integrated agriculture zone with consideration to water resource and environment.

The purpose of the project are: to develop agriculture support system for farmers, to promote agriculture finance and credit, to develop production organization, and to develop irrigated agriculture.

The expected out-puts of the project are:

- Villagers have improved their production and yield and are able to sell rice
- Productivity and yield of rainfed and irrigated paddy have been improved
- Improved rice variety are introduced
- Farmers are applying fertilizer at acceptable ratio
- Model farmers have been established
- WUOs have been established and strengthened to manage their own irrigation scheme
- Credit groups have been established to receive credit support for APB
- Buying and selling groups have been established to support the marketing of rice
- Village Development Funds have been established and collection of the VDF implemented every year
- Irrigation systems in the whole areas have been improved with consideration of water resource availability.

The main activities described by the participants are:

- provision of improved seed variety
- provision of fertilizer to wet and dry season production
- provision of pesticide
- training farmers on rice production techniques
- establish demonstration plots by model farmers
- training model farmers on specific techniques
- study tour for farmers in more developed areas
- establish WUO
- training to WUO committee in water management and other subjects

- strengthen the village organization
- training of village committee in different subject related to production and irrigation
- establish buying and selling groups for paddy
- establish credit groups in relation to above groups
- training credit groups in credit knowledge
- construct weir at Nam Dua River for Thonharb
- construct weir at Huay Sane for Nakhua and Nahin
- construct weir at Nam Dua for Nakhua
- repair existing fuel pumps
- construct irrigation canals at Thonharb, Nakhua Nai, Nakhua Nok, and Nahin.
- Construct 2 km access road to Thonharb
- Repair 2 km access road to Nahin
- Open new land for paddy at Nam Dua (30 ha)

The estimated inputs amount to 6,981,100,000 KIP (or 918,570 US\$). About 93% of the inputs are for irrigation and rural infrastructure development.

In the PDM the villagers have been requested to contribute 15% in the construction work. Therefore, there is a precondition that villagers will contribute to the project.

The detail PDM for Thongharb-Nakhua is shown in Annex 3.

5. LIMITATION OF THE WORKSHOP

Time constraints

The 3 PCM workshops were arranged to cover one day for participatory analysis, one day for problem analysis, one day for objective analysis, two days for the PDM, and one day for the feedback meeting presentation. In practice the execution of the workshops consumed more time in travelling and in preparation especially when the exercise was combined with an on-the-job training to the "virtual TFT". However, the team managed to complete the workshops according to schedule and with an acceptable result that could serve as a base for this feasibility study.

The level of knowledge between the participants

In order to get even representation of the village community the selection of participants was focused on the village administration authority, mass organization and representative from farmer groups. In practice, the majority of the participants were male and there was small participation of women. Representatives from the "village elders" were also present. Considering the package of participants in all 3 workshops, there were difficulties in the moderation and in the implementation of the PCM process due to the different level of knowledge among the participants. About 10% of the participants could not write, but they got help from others. The moderator considered that about 90% participation in the workshop was performed.

6. FOLLOW-UP

The JICA study team has summarized those proceedings. The document will be translated into Lao language and circulated to the village authority and agencies concerned. In the process of giving feedback to farmers, the TFT and village authority have already presented the PDMs to the villagers. It is anticipated that any reaction and comments from the community on the PDMs will be recorded by the Village Authorities and TFT and send to the JICA study team for adjustment.