

Summary of Terminal Evaluation Survey

I. Outline of the Project	
Country : Laos	Project title : Aquaculture Improvement and Extension Project Phase II (AQIP2)
Issue/Sector : Fishery	Cooperation scheme : Technical Cooperation
Division in charge : JICA Laos Office	Total cost : 5.5 (thousand)_yen
Period of Cooperation	Apr 2005 – Apr 2010 (5 years)
Supporting Organization in Japan : Ministry of Agriculture, Forestry, and Fisheries (Fisheries Agency)	
1 Background of the Project <p>Fish and other aquatic organisms are the most important animal protein source for the people in Lao PDR. The government of Lao PDR is trying to increase production of fisheries products in the national food security policy. Production increase by catching fisheries in natural and man-made waters is limited as fishing pressure has already reached to the maximum sustainable yield level or over it. Therefore, promotion of aquaculture is a matter of emergency for the production increase of aquatic organisms.</p> <p>The government of Japan has been conducting technical cooperation projects (AQIP 1 and AQIP 2) to assist development of appropriate techniques (including culture technique, culture farm management technique, as well as extension technique), and capacity building (both human capacity and institutional capacity) in order to contribute to aquaculture promotion in Lao PDR.</p> <p>AQIP 1 was implemented from 2001 to 2003. the project established NADC as a national aquaculture research and development, and training center under DLF, trained staff of NADC and collected information on aquaculture situation throughout the country. Thus, a firm basis has been established by AQIP 1 for implementation of the project aiming at aquaculture development and extension in rural areas. Past other donor's projects such as Food and Agriculture Organization (FAO) and Asian Institute of Technology (AIT) revealed that enhancing aquaculture extension is needed in Provincial / District level because rural people tend to have less consciousness to produce fish by making clear plan. AQIP2 has utilized achievement of AQIP1 and has effort to expansion of the aquaculture in rural area of the country.</p>	
2 Project Overview (1) Overall Goal Standard of living of rural fish farmer is improved through the dissemination of aquaculture suitable for local conditions in the 4 target provinces.	
(2) Project Purpose Aquaculture suitable for local condition is established in the 4 target provinces.	
(3) Outputs <ol style="list-style-type: none"> 1. Adequate aquaculture methods are verified according to the local conditions of pilot sites. 2. The capacity of relevant persons such as target farmers, province/district extension staff and staff of PASs regarding aquaculture technology and extension is improved. 3. Fish farmers of the focal districts introduce improved aquaculture methods. 	

4. The roles of relevant organizations are clarified and their collaboration mechanism is developed regarding the aquaculture extension matched with the local conditions.

(4) Inputs

Japanese side :

- Dispatch of Experts : 10 experts (150 MM: including plan in 2009)
- Training of C/Ps in Japan : 18 C/Ps
- Provision of machineries and equipment: About 14.5 million yen (159,190 US\$)
- Provision of facilities: About 18.0 million yen (195,000 US\$)
- Local cost : About 64.6 million yen

Lao Side:

- Provision of land, building, and facilities
- Allocation of C/Ps: 36 C/Ps

II. Evaluation Team

Members of Evaluation Team	<ol style="list-style-type: none"> 1. <u>Team Leader:</u> Mr. Satoshi CHIKAMI (Senior Adviser on Fishery Development and Rural Development, JICA HDQ) 2. <u>Aquaculture:</u> Mr. Hyato SHIRASE (Senior Adviser to the Director General of the Rural Development Department, JICA HDQ) 3. <u>Rural Development:</u> Mr. Naoki TATSUZAWA (JICA Expert, Department of Planning, MAF in Lao PDR) 4. <u>Evaluation Analysis:</u> Dr. Masanori DOI (Managing Director, INTEM consulting Inc.) 5. <u>Evaluation Planning:</u> Mr. Moriaki WATANABE (Project Formulation Advisor, JICA Laos Office) <p>Besides, 9 members from Laos side participated in the process of joint evaluation</p>	
Period of Evaluation	7/Oct/2009~27/Oct/2009	Type of Evaluation : Terminal

III. Results of Evaluation

1 Project Performance

(1) Activities

The activities for Output 1 “adequate aquaculture methods are verified according to the local conditions of pilot site” had a plan to complete in the 3rd year. However, the duration of the activities was extended in one more year because enhancing function of the pilot sites was needed. Most of other activities have been implemented well as scheduled according to PO.

(2) Outputs

Output 1: Adequate aquaculture methods are verified according to the local conditions of pilot sites.

- A total of 6 technical manuals has been prepared and additional 2 manuals are in preparation.
- From 2005 to 2008 production of fish culture by target farmers in Pilot villages increased by 122 % on average.
- Most of the farmers in pilot villages have intention to continue aquaculture after the termination of the Project.

Output 2: The capacity of relevant persons such as target farmers, province / district extension staff and staff of PASs regarding aquaculture technology and extension is improved.

- More than 2 staff members of each PAS in the target provinces can train district staff and farmers.

- More than 2 staff members of each PLFS in the target provinces can make provincial aquaculture plan and give necessary guidance to the PAS and DAFO.
- More than 2 staff member of each DAFO in the target districts can give guidance to farmers.
- 2 progressive farmers of each pilot villages were certified officially as VADW who conduct extension activities to other farmers.

Output 3: Fish farmers of the local districts introduce improved aquaculture methods.

- More than 1,000 farmers have applied improved aquaculture methods in 8 focal districts.

Output 4 The roles of relevant organizations are clarified and their collaboration mechanism is developed regarding the aquaculture extension method with the local conditions.

- The Project proposed “Rural Aquaculture Promotion Package (RAPP)” as method for sustainable development of aquaculture in Lao PDR and the RAPP was officially authorized by DLF.
- Although the functions and collaboration mechanism of relevant organizations have been developed through the Project implementation, collaboration agreement defining duties of each organization has not been agreed.

(3) Project Purpose

Project Purpose: Aquaculture suitable for local conditions is expanded in the 4 target provinces

- Approximately 1,000 fish farmers in pilot villages and extension villages were considered to increase fish production more than 40 % in 4 target provinces.
- Based on the principle of RAPP, Provincial Aquaculture Development Strategy was prepared in each target province. Aquaculture extension direction at province and district level has been discussed and agreed in principle by all of relevant organizations.

(1) Overall Goal

Overall Goal: Standard of living of small-scale fish farmers is improved through the dissemination of aquaculture suitable for local conditions in the 4 target provinces.

- The average annual increasing rate of fish production in the pilot villages was 30 %. There is possibility to accomplish the indicator, fish consumption of 22 kg / person / year by the rural people in 4 target provinces, in future by encouraging the aquaculture continuously.

2 Summary of Evaluation Results

(1) Relevance

The relevance of the Project is very high.

- Per capita fish consumption of Lao PDR remained at the lowest level in the Indochina region. Although it tends to increase slightly in recent years, the domestic fish production and supply from capture fishery may not increased largely in rural areas. Therefore basic needs exist for aquaculture with low cost aiming at home consumption as well as income generation.
- The Project contributes for achievement of “stable food supply” and “reduction of poverty” which were stressed in “Fifth Social Economic Five Years Development Plan (2001-2005)” as focused issues and are continuously given priority in the current “Sixth Social Economic Five Years Development Plan (2006-2010)”. In addition, agriculture and forestry development addressed to poverty reduction is one of the most important issues in “National Growth and Poverty Eradication Strategy (NGPES)”.
- DLF has set forth the four priority issues for the development of fishery sector of Lao PDR. Those are aquaculture, fishery resource management, assessment of water environment and post harvest. Sustainable development of freshwater aquaculture is the most important target in the fishery sector of the country where natural fish resources tend to decrease markedly.
- In the Country Assistance Program for Lao PDR, Three goals of assistance to Laos and six priority areas are described. This project is corresponded to one of three goals “with a view to promoting the reduction of poverty from the standpoint of ”human security”, Japan will support Laos in its steady steps towards the achievement of the Millenium Development Goals(MDGs)” and one of six priority areas “Developing rural regions and sustainable use of forest resources” .

- In National Growth and Poverty Eradication Strategy, 72 districts of 142 districts in the whole country are designated as prior area for poverty reduction countermeasure. The target provinces in the project includes 20 districts, and it could contribute for achievement of Lao National Development Plan.

(2) Effectiveness

The effectiveness of the Project is evaluated high

- The Project undertook the 2-step extension approach, initially focused on the 12 pilot villages (Output 1) and then expanded to the 54 extension villages by using the experiences in the pilot villages (Output 3). Technical training of relevant government officials as well as fish farmers has been conducted and their capacity has been strengthened by various joint project activities with Japanese experts and counterpart of NADC (Output 2). By extending the period of intervention to the pilot villages for one year from initially planned 3 years to 4 years, capacity development of seed producing farmers could be secured and the “FTF extension” became functionalised. Based on those experiences and results, RAPP was drafted by the Project and authorized by DLF as a future aquaculture development tool. As for the aquaculture extension activities after termination of the Project, PADS was prepared according to the framework of RAPP and agreed by relevant parties. (Output 4). Those series of project approaches were appropriate and effective to accomplish the project purpose.
- The principles of RAPP are official appointment of VADW and spontaneous aquaculture extension by VADW at cluster level. Generally 1-2 progressive farmers or aquaculture groups have started seed production at each pilot village. Some of those progressive fish farmers have already motivated to extend the knowledge and skill for other villages as well as his/her village.
- Based on the results of the pilot project, effectiveness of the group aquaculture by WU, community and school has been verified feasible in addition to individual aquaculture that had been planned from the initial stage of the Project. The Project achieves the project purpose by encouraging positively both types of aquaculture activities.

(3) Efficiency

The efficiency of the project is almost high.

- The Project could utilize the result of its phase 1 such as improved facility of NADC and staff trained in the phase 1, which improved efficiency of technical cooperation in the phase 2.
- Most of inputs by Japanese and Lao side have been done based on the plan both in quality and timing. Although number of Lao personnel allocated at NADC and provision of operation cost was insufficient during the early project period, Lao side made effort to allocate necessary number of counterpart staff such as official appointment of the director of NADC and 3 new staff.
- The Project supported improvement of facilities and equipment at NADC, PAS of the 4 target provinces and one district level aquaculture station in Laongan District. They have been used appropriately for the project activities, particularly for training of farmers and seed production.

(4) Impact

Positive impact of the Project is recognized.

- It is well-known that the small-scale aquaculture plays an important role for providing fish for self-consumption. According to the survey of the Project for the pilot villages, small-scale fish farmers with annual production less than 100kg were dominant occupying 71% in number of farmers and 60.9% of their production was consumed by themselves. Considering the production scale, medium- and large-scale farmers are also important to supply fishes in the village. It can be concluded that extension of aquaculture by the Project inspired significant positive impact towards the Overall goal that has been pursued to increase per capita fish consumption in target provinces, which is considered as an indicator for improving standard of living in rural area.

- The Project has tried to involve women aggressively in various aquaculture-related activities. In particular group aquaculture of a total of nine WU was supported by the Project and achieved preferable results. In many cases, profits obtained from aquaculture are not shared by the members but kept for the activity of WU and for social safety of the villagers. It was confirmed in this study such group aquaculture contributes largely for socio-economic empowerment of women in rural areas. From these aspects, it is concluded the Project has generated significant impact to gender mainstreaming.
- The Project derived an impact to formulate a spontaneous organization of progressive fish farmers. A progressive fish farmer in Xaignabouli province has organized a fish farmer's network to be functioned for mutual benefits such as exchange of seeds or broodstock, joint procurement of equipment and feed and information sharing.
- The project activities generated various intangible positive impacts to villagers that were considered as multi-dimensional function of aquaculture. For example, two ethnic groups that did not closely collaborate before AQIP2 have been encouraged to collaborate each other through the Project activities. Some activities enhanced mind of mutual help among villagers.

(5) Sustainability

Sustainability of the Project is considered mostly high, however, further consideration for securing the sustainability is necessary.

- Based on the achievements of the Project and also taking into consideration the new local development policy, namely the village cluster approach, the Project has prepared the RAPP including VADW appointment system, which are considered a sort of road map after the termination of the Project since they have been approved and authorized officially by DLF. It is confirmed that Lao PDR makes continuous efforts to materialize them particularly in provincial and district levels.
- Seed producing farmers or core farmers who can act as the hub of aquaculture extension in rural area have been fostered in the 12 pilot villages of the Project and they are now providing technical information for ordinary farmers who come to buy seeds. The VADWs selected among such progressive farmers and certified by DLF will work for spontaneous aquaculture extension with social incentive as well as economic incentive. Effectiveness of the FTF technical extension has also been verified in some other countries. It is suggested that the FTF approach implies high sustainability for extension of aquaculture in private basis and supplements the government extension services.
- It is not clear whether aquaculture extension activities by extension workers continue to be implemented, because local government in Provincial / District level has always faced insufficient human resources and budget. However, FTF extension approach by VADW as mention above can make for extension activities by local government.
- Group aquaculture of WU that was initiated by the Project seemed to be accepted by the WU members as a new income generating activity for the union/village not for individual. Work for the common benefit is traditionally undertaken in rural area of Lao PDR. The members show their interest and will to continue group aquaculture. Based on the results of project activities, their involvement for aquaculture extension has described clearly in RAPP. From those aspects, aquaculture of WU is evaluated to keep sustainability after the Project.

3. Factors promoting better sustainability and impact

(1) Factors concerning to Planning

None

(2) Factors concerning to the Implementation Process

As for contributory factors, various collaboration activities with NGOs as well as national and international institutions can be pointed out. Main collaboration activities show as below.

- construction of the village halls of three pilot villages in Oudomxai province (Collaboration with two Japanese NGOs)

- Promotion of joint research and technical studies on aquaculture (LARRec, National University of Laos, JIRCAS, Tokai University, University of Tokyo, etc.)
- Pipeline with foundation (Environmental study and education regarding the fishes in paddy fields by the Nagao Foundation)
- Collaboration on the field activities (SEAFDEC and AIT)
- Collaboration with similar project (FORCOM)

A series of those collaborative activities contributed for strengthening of capacity of both villagers and counterparts.

4 . Factors inhibiting better sustainability and impact

(1) Factors concerning to Planning

None

(2) Factors concerning to the Implementation Process

As for obstructive factors, natural disaster can be pointed out. Flooding occurred in a part of target areas in Oudomxay, Xaiyabouli and Salavan provinces in 2008, on the other hand insufficiency of rainfall in Savannakhet province in the same year. Those natural disasters obstructed stability of aquaculture operation of fish farmers in both pilot and extension villages.

5 . Conclusion

The Team confirmed that the Project has prepared sufficient numbers of technical manuals to be adopted for rural fish farming, provided necessary equipment, supported improvement of facilities of NADC and PAS, and implemented a lot of theoretical and practical training not only for Lao government personnel but also for villagers during the project period of 5 years from 2005 up to now. As the results the aquaculture production of the target area has been increased and a technical package for aquaculture extension, namely the Rural Aquaculture Promotion Package (RAPP) was prepared and authorized by DLF. Overall, the Team concludes that so far this Project has almost achieved the Project Purpose with high effectiveness and efficiency, and confirms that the remaining part concerning the provincial aquaculture development plan will be completed by the end of the Project.

It was also confirmed by the Team that the Project has elaborated many positive impacts to rural communities not only on improvement of standard living but also on gender mainstreaming, formulation of a network of progressive farmers and enhancement of amicability of different ethnic groups. DLF and relevant central and local organizations show their strong will to keep continuous efforts for securing sustainability of aquaculture extension activities that have been introduced and verified by the Project. It is deemed that the farmer to farmer approach shown in RAPP works by initiative of VADW.

Accordingly, the Team suggests for both Lao and Japanese authorities that the Project can be terminated as scheduled in R/D and PDM. It is expected that the Project accomplish the remaining activities taking into consideration the recommendations.

6 . Recommendations

(1) Intensive Support for Seed Producing Farmers (To the Project)

It is found that seed demand is increasing in the target areas and the increasing number of fish farmers show their interest to produce seed by themselves. Actually, some individual farmers, women's unions and VAPC groups have already stated seed production. During the remaining period, the Project should intensify its technical support to such seed producing farmers. It is also recommended, where applicable, to build a network of VADWs for the promotion of their reciprocal cooperation such as technology transfer from advanced farmers to beginner farmers in the seed production. In addition, facilitating the seed production farmers to avail of financial sources such as Agriculture Promotion Bank and other donors is recommended for constructing/upgrading hatchery facilities and equipment.

(2) Monitoring and Documentation of VADW Activities (To the Project)

24 farmers were selected from pilot villages and certified as VADWs in October 2009. They are now expected to conduct aquaculture extension activities in the respective clusters. The Project should closely monitor and guide their extension activities and document successful cases of both passive and active aquaculture extension in order to scrutinize the effectiveness of the RAPP.

(3) Formulation of Provincial Action Plan (To the PAFO)

Provincial Aquaculture Development Strategy (PADS) has been formulated jointly by the Project, PAFO, PAS, and DAFO of target provinces / districts. Based on the PADS, a detailed action plan should be prepared by each target province. The plan includes budget, time, and responsible organizations, etc. The plan should be authorized by local authorities. To the extent possible, the Project should provide assistance to local authorities in its formulation.

(4) Implementation of RAPP in the Cluster Approach (To the DLF)

The RAPP developed by the Project as a standard package of rural aquaculture promotion is conformed to the cluster development policy of Lao government that is to improve the access of rural people to government services. Although the village cluster approach has not yet been adapted in full-swing in the whole country, it is recommended that the DLF promotes implementation of the RAPP in the Project extension sites in coordination with concerned offices after the termination of the Project.

(5) Promotion of Integrated Farming and School Aquaculture (To the DLF)

Based on the experience of the Project in collaborative activities with FORCOM, potential of integrated farming of fish with animal husbandry and agriculture such as pig-cum-fish culture and rice-cum-fish culture was confirmed. Also school aquaculture is considered as a means of future aquaculture promotion. The Team recommends for future similar aquaculture projects to incorporate those alternative aquaculture activities.

7. Lessons Learned

(1) Promotion of Women's Union (WU) activities

It is noteworthy that the group aquaculture by WU has been successfully implemented and the woman participants have been empowered. They raise a common fund from the proceeds of fish culture and/or seeds production, which is used in turn for the purpose of mutual support in case of necessity such as delivery or sickness of members. Thus, it seems that the continuation of their aquaculture activities is highly likely even after the project termination. There are WUs already organized in most of the villages nationwide with solid organizational structure including leadership and regulations that may lead to smooth implementation of group aquaculture operations. The experience of the Project in the promotion of WU activities can be a good reference for other rural development activities.

(2) Effectiveness of Farmer to Farmer (FTF) Approach

In the course of the Project implementation, the FTF extension approach has shown its effectiveness to multiply the number of beneficiary fish farmers and efficiency of government intervention in the extension work. The FTF approach is considered applicable not only to aquaculture but also to other rural development if economic incentives and social status are properly provided to key beneficiaries.

(3) Implications of Group Aquaculture in Poverty Reduction

The monitoring survey conducted by the Project shows that fish farmers are generally richer than no-fish farmers. The development interventions may widen such as an economic gap between the two groups. The Project has given due consideration to this social aspect through the coordination function of the VAPC and the promotion of group aquaculture which low-income non-fish farmers and women participated in. In the rural setting especially, it is important to understand social and cultural values of the target people who might opt to behave on the basis of not market economy but solidarity and harmony of the community. In this context, the group aquaculture of WUs has succeed but the groups of low-income farmers are not able to sustain the group activities probably due to their high vulnerability. Thus, this aspect remains as challenge that face the rural aquaculture promotion in particular and many

other rural development projects in general.

8. Follow-up Situation

None