

評価調査結果要約表（英文）

1. Outline of the Project	
Country: Myanmar	Project title: Small-scale aquaculture extension for promotion of livelihood of rural communities in Myanmar project
Issue/Sector: Agriculture	Cooperation scheme: Technical Cooperation
Division in charge: Rural Development Dept.	Total cost: 230 million yen
Period of Cooperation	(R/D): March 6, 2010 (Period): June 8, 2009 – June 7, 2012
	Partner Country's Implementing Organization: Ministry of Livestock and Fisheries, Department of Fisheries (DoF) Supporting Organization in Japan: None
Related Cooperation:	
<p>1-1. Background of the Project</p> <p>“Small-scale aquaculture extension for promotion of livelihood of rural communities in Myanmar project (SAEP)” has been officially launched in 2009 for the cooperation period of 3 years (Hereafter, referred as “the Project”). The Project selected 5 target townships in Ayeyarwady and Bago Regions and Kayin State in consideration of criteria such as availability of water resources, the number of interested farmers in small-scale aquaculture, and accessibility from regional/ district/ township offices and fishery stations.</p> <p>The objective of the Project is to increase the number of farmers who are implementing small-scale aquaculture for the improvement of their livelihood in the target townships. To achieve the objective, small-scale fish culture including small-pond culture and rice-cum-fish culture is introduced to the farmers as the main activities of the Project. The Project also takes the so-called farmer-to-farmer extension approach as a main strategy to promote small-scale aquaculture among rural farmers without much dependence on governmental extension services. Since advanced farmers who are willing to transfer aquaculture technology to other farmers play essential roles to sustain the aquaculture development, the Project trains the core farmers on techniques of fish seed production, grow-out culture as well as intermediate culture of fish seed (to grow small fry to fingerling size). Those core farmers that produce fish seeds are motivated to approach and teach suitable aquaculture methods to other farmers in order to extend the market for fish seeds they produce. By establishing core farmers as local seed suppliers, the problem of inadequate seed supply will also be solved.</p> <p>At about several months from the commencement, a consultation mission was dispatched by JICA in February 2012 to discuss the measures to improve the Project implementation. In addition, the mid-term review was conducted by the joint team from January 30th to February 18th, 2011 for the purpose of finding the degree on achievement based on the PDM (Project Design Matrix) and PO (Plan of Operations) and evaluating comprehensively with five evaluation criteria.</p> <p>1-2. Project Overview</p> <p>(1) Overall Goal</p> <p>Small-scale aquaculture for improvement of livelihood is disseminated in Ayeyarwady and Bago Regions and Kayin State, and extended in other less developed areas</p>	

(2) Project Purpose

Number of the farmers who are implementing small-scale aquaculture for the improvement of their livelihood is increased in the target townships.

(3) Outputs

- 1) Necessary conditions and techniques on the small-scale aquaculture promotion for farmers in the target townships are clarified.
- 2) Extension systems of the small-scale aquaculture for the farmers in the target townships are strengthened.
- 3) “Pilot farmers” and “core farmers” are selected in the target township and “farmer to farmer” extension approach is practiced by them.

(4) Inputs

Japanese side: Total cost 230 million yen

Expert: 6, Local cost (Estimation): 24,777,000 Yen (in total, at the time of Terminal Evaluation),

Provision of Equipment: 10,773,000 Yen (in total), Trainees received (Training in Japan):17

Myanmar side:

Counterpart: 8, Local Cost: necessary cost for the operation of the Project which includes allowance for the project activity of local DoF staff and utility cost for the project office.

Land and Facilities: the office space in Yangon.

2. Evaluation Team

Members of Evaluation Team	Mr. Hideyuki Maruoka Mr. Satoshi Chikami Ms. Midori Shinzawa Ms. Aika Tomimatsu Mr. Harumi IIDA	Team Leader Small-scale Aquaculture Aquaculture extension Evaluation Planning Evaluation Analysis
Period of Evaluation	February 29, 2012 ~ March 17, 2012	Type of Evaluation: Terminal evaluation

3. Results of Evaluation

3-1. Result of Achievements

(1) Achievement of Outputs

Output 1: Necessary conditions and techniques on the small-scale aquaculture promotion for farmers in the target townships are clarified.

At first, a baseline survey was conducted by the Project in order to gather data and information on social and economic conditions of the target townships in August 2009. Result of the baseline survey was utilized to make indicators of PDM of the Project. On the other hand, a series of interview surveys was conducted to understand the level of small-scale aquaculture practices. The result of those surveys was utilized for the project activities.

The Project introduced three types of small-scale aquaculture: pond culture, rice-cum-fish culture and cage culture, and identified appropriate small-scale aquaculture, which is affordable and adaptable to local conditions in each target township. According to the result of verification, pond culture and rice-cum-fish

culture are recommended as appropriate method for all the five target townships due to its simple techniques and low cost. On the other hand, cage culture is considered not appropriate for small-scale farmers in Ayeyarwady Region because it needs amount of initial cost for making cage and operational cost for cage maintenance and feed. Also, higher skills are required to operate cage culture.

In order to strengthen capacity of C/Ps in DoF and the target farmers, technical manuals and guidelines were prepared by the Project. Those manuals and guidelines have been utilized in the series of trainings by the Project. Regarding present condition of Output 1, indicators have been fulfilled. Therefore, Output 1 has been achieved.

Output 2: Extension systems of the small-scale aquaculture for the farmers in the target townships are strengthened.

In order to strengthen the capacity of the local DoF officers in the five target townships, the Project has implemented OJTs and training courses. Contents of those trainings include simplified methods for monitoring, routines of recording data, technical points of extension works for farmers, and others. (47 staffs were trained.) The local DoF staff was required to give appropriate technical advice for farmers and conduct regular monitoring in each township.

Since the second year of the Project, the local DoF staff has started to conduct regular monitoring along the monitoring plan by their own. Also, those staff has given technical guidance to farmers regarding aquaculture and has worked for preparation of workshops and trainings for farmers.

On the other hand, first version of “Guideline for Farmer to Farmer (FTF) Aquaculture Extension Approaches” was made by the Project in August 2010. The experience of the project activities was incorporated into the guideline. Regarding present condition of Output 2, indicators have been fulfilled. Therefore, Output 2 has been achieved.

Output 3: “Pilot farmers” and “core farmers” are selected in the target townships and “farmer to farmer” extension approach is practiced by them.

In the second year of the Project, core farmers were selected from pilot farmers by the Project. Selection criteria of core farmers were; their interest and eagerness for aquaculture, social status in community and location for being hatchery station. One core farmer was selected from each of Yae Kyi, Pyay and Letpandan townships, and two core farmers were selected from Paan township. In total, five core farmers were selected and have worked in the Project.

On the other hand, a series of capacity development trainings for the target farmers regarding small-scale aquaculture was conducted by the Project. Core farmers and pilot farmers have strengthened their capacity to undertake aquaculture.

The core farmers in Pyay and Letpandan have already functioned as seed producer providing seeds to other pilot farmers, and they have implemented “farmer to farmer” extension (hereafter refereed as “FTF extension”) in cooperation with DoF staff. They have taken initiative to introduce aquaculture to new farmers. On the other hand, the core farmers in Yae Kyi and Paan have implemented FTF extension, but it is necessary for them to reach a sufficient level.

Regarding present condition of Output 3, indicator 3-1 has been fulfilled. Indicator 3-2 has not been fulfilled but it will be fulfilled by the end of the Project. Therefore, Output 3 will be achieved.

(2) Achievement of Project Purpose

Number of the farmers who are implementing small-scale aquaculture for the improvement of their livelihood is increased in the target townships.

The Project introduced three types of small-scale aquaculture; pond culture, rice-cum-fish culture and cage culture, and identified appropriate small-scale aquaculture, which is affordable and adaptable to local conditions in each target township. In 2011 - 2012 year, a total of 150 farmers practiced small-scale aquaculture in the target townships including 75 farmers who newly practiced summer-rice-fish culture. All of them are small-scale aquaculture farmers/groups that newly started aquaculture through the Project. The number of farmers for small-scale aquaculture will increase for next season. Regarding present condition of Project Purpose, indicators have been fulfilled. Therefore, Project Purpose has been achieved.

(3) Achievement of Overall Goal

Small-scale aquaculture for improvement of livelihood is disseminated in Ayeyarwady and Bago Regions, Kayin State, and extended in other less developed areas.

The number of farmers for small-scale aquaculture has been increasing year by year. For 2012-2013 year. However, to achieve the Overall Goal of the Project, further expansion of small-scale aquaculture is necessary. In this regards, several issues arise, those are as follows;

- It is not clear whether pilot farmers and encouraged farmers can continue small-scale aquaculture even after the completion of the project support, since they have been assisted by the Project with inputs of aquaculture.
- In order to reduce cost borne by the famers, integrated farming should be promoted in cooperation with other government organizations such as Myanmar Agriculture Service (MAS), Irrigation Department, Settlements and Land Records Department (SLRD), and Livestock Breeding and Veterinary Department (LBVD).
- Core farmers in Yea Kyi, in Ayeyarwady and Paan in Kayin still need technical support to adapt the skill and the technology for seed production and FTF extension.
- It is indispensable to prepare operational plan indicating goals, approaches, activities, budget and other resources required, and timeframe.
- Institutional arrangement would be required to establish appropriate organizational structure and to allocate personnel, budget, etc.

Therefore, Overall Goal can be achieved if the issues mentioned above are properly addressed.

3-2. Summary of Evaluation Results

(1) Relevance: High

The aim of the Project is consistent with policies of the Government of Myanmar as well as needs of the target area, and Japanese official development assistance policy. And, the Project is correctly designed to achieve its purpose. Therefore, relevance of the Project is high.

(2) Effectiveness: High

Through implementation of activities and achievement of Outputs, the Project Purpose has been already achieved. Therefore, it could be said that effectiveness of the Project is high.

(3) Efficiency: High

Regarding implementation of the Project, Inputs from Japanese side and Myanmar side are efficiently utilized in the project activities. And, the relationship between both sides has been kept well through implementing activities together and organizing JCC. The Project has been well managed and implemented without delay. Thus, the Project has been efficiently implemented.

(4) Impact: Moderate

In order to achieve the Overall Goal of the Project, further expansion of small-scale aquaculture is necessary. In order to do so, several issues should be properly addressed including institutional arrangement of DoF. On the other hand, some positive impacts are observed along the project activities. Those positive impacts are 1) Effectiveness of rice-com-fish culture on paddy rice farming, 2) Reflection of the result of the verification study on rice-com-fish culture on paddy rice farming into the handbook for agricultural extension officers/workers, and 3) 12 farmers are willing to start small-scale aquaculture with support from local DoF office in Yea Kyi township.

(5) Sustainability: Moderate

Sustainability of the outcome of the Project is expected to be fair at this moment. Regarding policy and institutional aspect, sustainability of the project outcome will be kept. However, concerning organizational and financial aspect, further efforts of DoF are necessary. And then, regarding technical aspect, some core farmers still need to have capacity building to implement FTF extension.

3-3. Factors that Promoted Realization of Effects

(1) Factors Concerning the Planning:

The Project progressed in three phases of technology transfer: 1) from Japanese experts to Central/ Local DoF officers, 2) from Central/ Local DoF officers to core farmers, 3) from core farmers to small-scale aquaculture farmers. These phased implementation encouraged DoF officers and core farmers to start/extend small scale aquaculture positively, and it contributed to the Project goal and Project Sustainability.

(2) Factors Concerning the Implementation Process

Although DoF hasn't take a role of aquaculture extension and the Project activities were the additional for Local DoF officers, DoF implementation structure in Region/State, District, and Township level was arranged for the Project, so that it makes Project activities smoothly and contributed the outputs.

3-4. Factors that Inhibited Realization of Effects

(1) Factors Concerning the Planning

In the Project period, core farmers improved their capacity of seed production and FTF extension through training, for example, 3 core farmers experienced 2 seasons and 2 core farmers 1 season. However, it is still necessary to enhance their techniques and skills for stable seed production and FTF extension.

(2) Factors Concerning the Implementation Process:

N/A

3-5. Conclusion

The evaluation results based on the five criteria indicate the same situation from other point of view. While relevance, effectiveness and efficiency of the Project are considered to be high, the Project cast some uncertainties in the future in terms of impact and sustainability. In order to guarantee the sustainability and promote the impact of the project activities, there are issues to be tackled by DoF such as; establishment and consolidation of extension system of small-scale aquaculture including institutional arrangement of DoF, preparation of operational plan for the areas of expansion of small-scale aquaculture, verification of small-scale aquaculture without the project's support, intensive support for the core farmers, etc. It is expected that these issues are properly addressed by DoF in a timely manner so that the activities developed by the Project be continued, further developed and expanded nationwide in the future.

3-6. Recommendations

(1) To Establish and Consolidate Extension System of Small-scale Aquaculture

In order to achieve the Overall Goal of the Project, it is indispensable that DoF keeps and develops by its own effort the project activities such as support to core farmers, recruitment of new farmers, and coordination/implementation of farmer's trainings through extension system. And, it is required to consolidate the system through institutional arrangement such as determination of a responsible unit and person in charge, appointment of necessary personnel to guide and coordinate overall activities, and allocation of budget, in order to promote small-scale aquaculture nationwide including in the Central Dry Zone.

(2) To Make Operational Plan of Small-scale Aquaculture Extension

DoF should prepare multi-year operational plan of small-scale aquaculture extension in the targeted townships by setting up a goal and target in terms of the number of farmers engaged in small-scale aquaculture and core farmers, etc, in order to facilitate resource allocation for the extension in such townships. The operational plan should be based on small-scale aquaculture potential such as existence of small-scale ponds, water volume, fish price, and socio-economic conditions of farmers, and include, among others, goals, approaches, activities, budget and other resources required and timeframe.

(3) To Verify Sustainability of Small-scale Aquaculture

Farmers are developing small-scale aquaculture with the project's assistance such as fish seeds, feeds, and necessary equipment, etc. In this connection, it is needed to verify whether small-scale aquaculture farmers can continue their activities even after the completion of the Project. Therefore, verification of small-scale aquaculture is essential to check sustainability of the project activities by introducing monitoring period without any assistance by the Project to farmers except for technical advice.

(4) To Consider Application of Anthropological Knowledge in Designing Project Activities.

Project activities should reflect and respect socio-economic situation as well as cultural background including value system, of beneficiary farmers. In order to fit more adequately the intervention of the Project to local values, which may directly generate social incentives for the activities, it should be considered that planning of the activities for small-scale aquaculture extension uses more intensively knowledge from anthropologist especially in Kayin State.

(5) To Conduct an Endline Survey

In order to confirm the results of the project intervention, an endline survey should be conducted based on information of the baseline survey. Furthermore, as the activities developed by the Project have multiple dimensions of impacts such as nutritional improvement of children, and strengthening of community cohesion, in addition to livelihood improvement, an evaluation system including such dimensions should be incorporated into the design of the activities in the future.

(6) To Continue Support to Those Fish Farmers to Ensure Technology Adaptation

It is essential to continue providing support to those fish farmers that have been assisted by the Project even after the Project ends so that the farmers can firmly adapt the technology learned and continue to engage in the small-scale aquaculture in a sustainable manner.

(7) To Promote Integrated Farming

Small-scale aquaculture is considered as part of integrated farming system, including rice-cum-fish culture and chicken/pig rearing near or above the fishpond. It is recommended for DoF to promote such integrated farming among the small-scale farmers to contribute to their improved livelihood, in collaboration with other relevant government agencies such as LBVD under Ministry of Livestock and Fisheries and Ministry of Agriculture and Irrigation.

(8) To Consider Additional Supports from Japan

In consideration of the above mentioned aspects, considerable efforts are needed for DoF to consolidate and expand the small-scale aquaculture in the target areas and nationwide. In this regard, additional assistance from Japanese side should be considered to support DoF's efforts.

3-7. Lessons Learned

(1) Consideration of Anthropological Aspects

Observed during site visits is a community system where farmers donate money to monasteries, churches, elderly people, and social welfare from the income of fish seed production and aquaculture, and participating villagers support aquaculture activities without any payment; a situation different from usual perceptions of economic incentive mechanism.

(2) Significance of a Verification Study

A verification study on the rice-cum-fish culture was conducted by DoF and CARTC/MAS and it demonstrated positive results such as low-input requirement, technical adaptability and enhancement of rice productivity. Because of such verification, MAS prepared a handbook for agriculture extension officers that included an explanation of contribution by the rice-cum-fish culture to rice productivity improvement.

(3) Capacity Development of DoF Local Officers

One of important factor to the smooth implementation of the Project is the active participation of the local DOF officers in the project activities. Capability of those local officers of DoF was enhanced by the Project through the Training of Trainers (TOT) conducted in the first year and further strengthened through monitoring activities. Thus, they eventually have been functioning as local extension agents. Therefore, it is noted that capacity development of the local officers has been the key to the effective extension system.