

Country Name	Small-scale Aquaculture Extension for Promotion of Livelihood of Rural Communities in Myanmar
Republic of the Union of Myanmar	

I. Project Outline

Background	Fish was regarded as one of the most important diet for the Myanmar people since more than 70% of animal protein intake was from fishery products. Annual per capita fish consumption was approximately 44kg (the Fisheries Statistics 2006-2007). It had been reported, however, that people in the rural area suffered from a deficiency of animal protein due to insufficient supply of fish. Although small-scale aquaculture was considered as a potential measure to solve the protein deficiency, the extension services had not been delivered sufficiently due to various reasons such as insufficient number of extension personnel and limited budget.												
Objectives of the Project	Through (1) Study on necessary conditions and techniques on the small-scale agriculture promotion, (2) Extension of small-scale aquaculture, and (3) Practicing of “Farmer to farmer approach” for extension, the project aimed at increasing the number of farmers who implement small-scale aquaculture for livelihood improvement, and thereby contributing to disseminating the small-scale aquaculture.												
	1. Overall Goal: Small-scale aquaculture for improvement of livelihood is disseminated in Ayeyarwady and Bago Regions and Kayin State, and extended in other less developed areas. 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.												
Activities of the project	1. Project site: Five target townships from Ayeyarwady and Bago Regions and Kayin State (Yae Kyi and Kyaung Kone in Ayeyarwady Region, Letpandan and Pyay in Bago Region and Paan in Kayin State) 2. Main activities: (1) Study on necessary conditions and techniques on the small-scale agriculture promotion, (2) Extension of small-scale aquaculture, and (3) Practicing “Farmer to farmer approach” 3. Inputs (to carry out above activities) <table><tr><td>Japanese Side</td><td>Myanmar Side</td></tr><tr><td>1) Experts: 7 persons</td><td>1) Staff allocated: 8 persons</td></tr><tr><td>2) Trainees received: 17 persons</td><td>2) Provision of project office</td></tr><tr><td>3) Equipment: Motorcycles, Tractors, Generator, Water Pump, Grass cutter, Air Compressor, Fish net for seed/ fish and others</td><td></td></tr><tr><td>4) Local Expenses: Daily operational costs, pond/paddy construction costs, training course, field surveys, , office equipment, etc</td><td></td></tr></table>			Japanese Side	Myanmar Side	1) Experts: 7 persons	1) Staff allocated: 8 persons	2) Trainees received: 17 persons	2) Provision of project office	3) Equipment: Motorcycles, Tractors, Generator, Water Pump, Grass cutter, Air Compressor, Fish net for seed/ fish and others		4) Local Expenses: Daily operational costs, pond/paddy construction costs, training course, field surveys, , office equipment, etc	
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Project Period	June 8, 2009-June 7, 2013 (Extension period: June 8, 2012-June 7, 2013)	Project Cost	(ex-ante) Approximately 230million yen, (actual) 268 million yen										
Implementing Agency	Department of Fisheries(DOF), Ministry of Livestock and Fisheries												
Cooperation Agency in Japan	FISHERIES & AQUACULTURE INTERNATIONAL CO., LTD.												

II. Result of the Evaluation

1 Relevance
<p><Consistency with the Development Policy of Myanmar at the Time of Ex-Ante Evaluation and Project Completion></p> <p>The project was consistent with Myanmar’s development policy. At the time of ex-ante evaluation, the 4th economic plan (2006-2010) prioritized expansion of aquaculture, improvement of socio economic conditions of rural (fishing) communities and others. At the time of project completion, the policy framework such as “The National Management Policies of Ministry of Livestock, Fisheries & Rural Development” (FY2013-FY2015) and “Rural Development and Poverty Alleviation Action Plan” (FY2011-FY2015) had guided to secure fish food production, to support the livelihood of the farmers and rural people, and to expand freshwater aquaculture.</p> <p><Consistency with the Development Needs of Myanmar at the Time of Ex-Ante Evaluation and Project Completion ></p> <p>The project was consistent with Myanmar’s development needs for small-scale aquaculture. At the time of ex-ante evaluation, more than 70% of animal protein intake was from fishery products for people of Myanmar, and therefore, fishery products were highly valuable protein sources for them. Per capita annual fish consumption was 44 kg at the ex-ante evaluation. At the time of project completion, it was reported that per capita annual fish consumption as of 2014 was 61kg, which was more than that of 2009. Therefore, fish continued to be an important animal protein sources for the people of Myanmar.</p> <p><Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation></p> <p>The project was consistent with Japan’s ODA Policy to Myanmar¹ at the time of ex-ante evaluation. Basic policy of ODA to Myanmar was “to implement projects which are urgently needed, and needed from the humanitarian aspect”. The project was consistent with the humanitarian aspect as follows: (1) improvement of nutritious status and livelihood of small-scale farmers is consistent with the “humanitarian support”, (2) Humanitarian support was needed for cyclone struck Ayeyarwady Region, and (3) Support for Kayin State is consistent with humanitarian support (ethnic minorities).</p> <p><Evaluation Result></p> <p>In light of the above, the relevance of the project is high</p>
2 Effectiveness/Impact
<p><Status of Achievement for the Project Purpose at the time of Project Completion></p> <p>The project purpose was achieved by the time of project completion as an indicator set to measure the achievement of the project</p>

¹ ODA Data book 2008

purpose “Number of small-scale farmers/groups that newly started aquaculture through the project activity become more than 100.” (indicator 1) was attained.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

After the project was completed, the effects of the project have partially continued, although no clear data was available, since DOF does not owe responsibility to collect data on the number of farmers doing small-scale aquaculture. In Myanmar, a pond whose size is less than 0.25 acre, which is generally regarded as suitable for small-scale aquaculture, is not subject to registration by DOF and therefore DOF does not keep a record.

However, through interviews with the DOF township offices, core farmers and general farmers, it was confirmed that farmers still continue small-scale aquaculture in the target townships except for Yae Kyi and Kyaung Kone in Areyawarddy Region. Farmers who continue small-scale aquaculture mentioned that before the project, it was difficult for them to catch fish from natural pond or river/stream even in rainy season (e.g. for the reasons of (i) availability of fish in natural pond or river/stream and (ii) access to natural pond or river/stream), however, after the project, farmers can get fish regularly except for dry season. In case of Yae Kyi and Kyaung Kone, most of the farmers who had implemented small-scale aquaculture during the project stopped their activity. The farmers and DOF officials mentioned that there was little positive impact in doing small-scale aquaculture since farmers in the two townships were able to catch wild fish from natural pond or river/stream and eat or sell fish. Some farmers somehow continued activities in Yae Kyi and Kyaung Kone to explore more adequate method and technique for small-scale aquaculture which were envisaged as a potential measure to improve the livelihood through getting/producing more fish in the two townships.

As to the activities of the core farmers, although most of the core farmers do not keep proper record on seed production, they generally mentioned that they continued seed/ fingerlings (juvenile fish) production and sold them to general farmers (except in Yae Kyi and Kyanung Kone). Although they do not organize regular training courses, they provide ad-hoc technical advices for the general farmers when requested.

About the livelihood, based on interviews to both of core farmers and general farmers, it is observed that generally, there are positive effects on their household income and fish consumption after starting small-scale aquaculture (except in Yae Kyi and Kyanung Kone). According to interviews with two core farmers, they get additional 200-250 USD annual income after the project. 10 general farmers mentioned that they generally earned additional 50-300 USD annual income and which is equivalent to additional 5-20% increase on their annual household income. As to the nutritious condition, according to anecdotal interview to general farmers, on average, a household eat additional 8-16 kg of fish per month in harvesting period.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The overall goal is partially achieved. According to interview to DOF and the core farmers, it is likely that the more than 300 number of farmers are doing small-scale aquaculture. However, while there are many small-scale aquaculture farmers in Bago Region, the number of small-scale aquaculture farmers is limited in Ayeyawarddy Region. Also, it remained unknown whether the small-scale aquaculture is disseminated to other less developed areas or not. Therefore, although the indicator 1 for overall goal is achieved, it is not confirmed whether small-scale aquaculture is spread the target Regions/State as a whole, nationwide or not, as data of the indicator 2 was not obtained.

<Other Impacts at the time of Ex-post Evaluation>

Some villagers delivered positive comments for gender perspective. Specifically, women are now actively involved in cultivating fish and have big voice on fish; women can be involved in decision making on how many fish should be sold to market and how many should be consumed in house. After the training offered to not only men but also women during the project, women acquired knowledge and technique and therefore became to play a key role for small scale aquaculture. It is observed that, since small-scale aquaculture is not feasible without women, women became to get more involved in decision making.

No land acquisition and resettlement occurred under this project, and no negative impacts on natural environment were observed.

<Evaluation Result>

In light of the above, through the project, the project purpose was achieved at the time of project completion, the project effects partially continued, and overall goal is partially achieved. Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal				
Aim	Indicators	Results		
(Project Purpose) Number of the farmers who are implementing small-scale aquaculture for the improvement of their livelihood is increased in the target townships.	Indicator 1: Number of small-scale farmers/groups that newly started aquaculture through the project activity become more than 100.	Status of the Achievement: achieved (partially continued)		
		(Project Completion)		
		[The number of pilot and encouraged farmers in five townships]		
		Township	Individual farmers	Farmer groups
		Yae Kyi (Ayeyarwady Region)	5	3
		Kyaung Kone (Ayeyarwady Region)	6	0
		Letpandan (Bago Region)	90	6
		Pyay (Bago Region)	31	2
		Paan (Kayin State)	16	6
		Total	148	17
		Total		
		165		
		(Ex-post Evaluation)		
		Clear data was not available, and there is difference among townships. In Yae Kyi and Kyaung Kone in Ayeyawarddy Region, most of farmers who had implemented small-scale aquaculture during the project stopped their activity. It was observed that farmers still continued small scale aquaculture in other area although clear data was not available.		
(Overall Goal) Small-scale aquaculture for improvement of	Indicator 1: Number of farmers who are implementing small-scale aquaculture in the target areas become more than 300 farmers.	Status of the Achievement: achieved		
		(Ex-post Evaluation)		

livelihood is disseminated in Ayeyarwady and Bago Regions and Kayin State, and extended in other less developed areas.		[Total (cumulative) number of farmers implementing small-scale aquaculture]				
		Township	2013 (Project completion)	2014	2015	2016
		Yae Kyi	8	N/A	N/A	2
		Kyaung Kone	6	0	0	0
		Letpandan	96	N/A	N/A	200-250
		Pyay	33	N/A	N/A	More than 100
		Paan	22	N/A	N/A	17
		Total	165	N/A	N/A	Around 350
	Indicator 2: Farmers in the other townships adjacent to the target townships start implementing small-scale aquaculture.	Status of the Achievement: not achieved (not verified) (Ex-post Evaluation) No data is available.				

Source : JICA internal documents, questionnaire and interviews with DOF in the targeted 5 townships, interviews with 3 core farmers and 10 plus general farmers

3 Efficiency

Both the project cost and the project period exceeded the plan (ratio against the plan: 117%, 133%). The project period was extended one year to strengthen the capacity of the core farmers. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The latest government policies as of ex-post evaluation such as “the Second Short Term Five Year Agriculture Policies (FY2016-FY2020)” and “the DOF’s vision” (set in October 2016) continuously specify the necessity and importance of extension of small-scale aquaculture for rural development and therefore small-scale aquaculture will be continuously highlighted by the government policy.

<Institutional Aspect>

DOF has the “Aquaculture Department”, but there is no particular department/office/staff specialized in small-scale aquaculture, however, the know-how of small-scale aquaculture has been complied in Aquaculture Division, and it has been delivered through responsible staff members who are trained at DOF training institutes. While Region/ State and township offices have officers who owe responsibility for small-scale aquaculture (not specialized only for small-scale aquaculture, though), whether the Aquaculture Department in the central level has a concrete plan to extend/maintain small-scale aquaculture needs to be confirmed.

<Technical Aspect>

According to the interviews with DOF township officers, those who conduct training for farmers on small-scale aquaculture receive prior trainings in DOF Region/ State offices. As to training to farmers, DOF provides support for farmers, specifically technical training, aquaculture manuals and fingerlings (juvenile fish). Since there is an established internal training system, it is observed that DOF has technical capacity for small-scale aquaculture. It was confirmed from all five DOF township that DOF officials utilize the manual for the occasion of (a) trainings to village people and (b) internal training. And based on manuals supported by the project, DOF updates and/or makes new manuals on, for example, conservation of natural environmental for sustainable small-scale aquaculture which were not included in the manual developed under the project.

<Financial Aspect>

DOF did not have specific figures for small-scale aquaculture budget. DOF mentioned that at least 300 million Myanmar Kyat in FY2014 and at least 600 million Myanmar Kyat in FY2015 were respectively approved and spent for small-scale aquaculture. There are rooms for improvement on financial conditions. First, there is no specific budgeting for small-scale aquaculture, and DOF allocates money for small-scale aquaculture when the budget is available. Second, DOF does not clearly grasp the total budget outstanding/necessity for small-scale aquaculture since Region/ State Government (i.e. local government), not central government, often allocate budget for local DOF offices for promotion of small-scale aquaculture. Nevertheless, although the budget is not classified for small-scale aquaculture, DOF has been allocating aquaculture budget annually, and necessary parts are executed for project targeted areas and other potential areas.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional and financial aspects of the implementing agency, such as no clear institutional and financial arrangement for small-scale aquaculture. Therefore, the sustainability of the effects through the project is fair.

5 Summary of the Evaluation

The project purpose was achieved at the time of project completion, as the number of small-scale farmers/groups that newly started aquaculture through the project achieved the target of “more than 100”. The project effects partially continued, as it was observed that the farmers continued small-scale aquaculture except for the target townships in Areyawarddy. The overall goal is partially achieved, as the number of small-scale farmers who started small-scale aquaculture increased. As for the sustainability, there are slight problems in the institutional the financial aspects, though strengths are found in the policy and technical aspects. For the efficiency, both the project cost and the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

DOF, especially Township Offices are recommended to promote data collection and analysis on small-scale aquaculture farmers, for example, the number of small-scale aquaculture farmers, volume of fish production and the revenue/expenditure on small-scale aquaculture. One of the main issues on extension of small-scale aquaculture is that DOF does not grasp ground situations on small-scale

aquaculture since officials of DOF are not instructed to do so. Without knowing ground situations, DOF will not be able to (i) make an effective policy, (ii) allocate adequate budget and (iii) evaluate impacts for/on small-scale aquaculture extension. It may be needed that DOF Township Offices, which are close to individual farmers, are authorized and appointed to collect data on small-scale aquaculture extension.

Lessons Learned for JICA:

When deciding indicators for project evaluation, the indicators should be tangible ones. Specifically, if collecting data is not institutionalized by the project implementing agency, the data will become uncollectable when project experts leave the project. It is necessary to set indicators which could be collectable by the existing institutional structure before starting the project. Also, during the project implementation, if it is found that the collecting the data by the project implementing agency is not institutionalized, the project should provide sufficient support for data collection so that the project implementing agency could collect data by itself.



[A general farmer implementing small-scale aquaculture (In Yaekyi Township, Ayeyawaddy Region)]

A general farmer who received training under the project has now two small ponds for small scale aquaculture. The farmer mentioned that they sell the cultivated fish to local market and their annual net income improved by approx. 10% after starting small-scale aquaculture. The farmer is satisfied with the improved income situation since the farmer can now buy more textbooks, stationaries and other study aids for their children.



[A core farmer engaging in fingerling production (In Pyay Township, Bago Region)]

A core farmer who received training under the project continuously cultivates and sells fingerling (juvenile fish) to general farmers for small-scale aquaculture. The core farmer says the number of farmers for small-scale aquaculture has been increasing in Pyay Township since fish is good source of income and nutrition to farmers. The core farmer continued that volume of fish sales has been rising year by year since the fingerling cultivated in his pond does not easily die thanks to the training under the Project and his fish acquired good reputation in his community.