

Summary of Terminal Evaluation

1. Outline of the Project	
Name of Country : The Republic of Madagascar	Project Title : Follow-up Phase of the Aquaculture Development Project in the Northwest Coastal Region of Madagascar
Sector : Fisheries	Type of Assistance : Technical Cooperation Project
Responsible division : East and Southern Africa Team, Rural Development Department	
Cooperation Period	December 2003- May 2006
	Implementing Agency : Direction of Fisheries and Halieutic Resources, Ministry of Agriculture, Livestock and Fisheries
	Donor Agency : JICA Other Relevant Cooperation : The Aquaculture Development Project in the Northwest Coastal Region of Madagascar (1998-2003)
1-1 Background and outline of the cooperation	
<p>Based on the results of the terminal evaluation on the previous core project (1998-2003), which was held in January 2003, three unsettled points were identified; 1) establishment of pond management, 2) improvement of feed development technology, and 3) improvement of epidemic prevention technology. This follow-up phase has started since December 2003, and will last until May 2006 to tackle the above subjects. The total duration of the follow-up is 2.5 years.</p>	
1-2 Components of the cooperation	
(1) Super Goal	
Small-scale shrimp culture is developed in a sustainable way with the participation of small-scale farmers in the Northwest Coastal Region of Madagascar.	
(2) Overall Goal	
Shrimp culture technology developed through the Project activities is put into practice, and its effectiveness is verified.	
(3) Project Purpose	
Capability of the Shrimp Culture Development Center (CDCC) is strengthened in order to develop shrimp culture technology, considering the local environment and conditions.	
(4) Outputs	
1) Pond management for small-scale farm is developed.	
2) Feed for small-scale shrimp culture is improved.	
3) Epidemic prevention method for small-scale shrimp farm is improved.	
(5) Inputs	
(The Japanese Side)	
(a) Dispatch of Japanese Experts	

<p>Long-term expert : 1 person (Shrimp Culture)</p> <p>Short-term experts : 4 persons</p> <p>(b) Implementation of training</p> <p>In country training : 2 persons</p> <p>(c) Provision of equipment</p> <p>Vehicle, Analyzing equipment, etc. (US\$ 70.9 thousand)</p> <p>(d) Project Operation Expense</p> <p>US\$ 127.3 thousand</p> <p>(The Malagasy Side)</p> <p>(a) Assignment of the Counterparts : 9 persons</p> <p>(b) Provision of Facility and Equipment</p> <p>(c) Local Cost</p> <p>US\$20 thousand in 2003</p> <p>US\$60 thousand in 2004</p> <p>US\$50 thousand in 2005</p> <p>US\$70 thousand in 2006</p>

2. Member list of the Terminal Evaluation Study Team

	Name	Position/Occupation
Member	Leader Mr. Toru TOGAWA	Resident Representative, JICA Madagascar Office
	Planning Evaluation Mr. Kyosuke KAWAZUMI	Team Director, East and Southern Africa Team Rural Development Department, JICA
	Evaluation Analysis Mr. Akira MAEKAWA	INTEM Consulting Inc.
Period	18 Feb. 2006 - 3 Mar. 2006	Type of Evaluation : Terminal Evaluation

3. Summary of the Evaluation Results

3-1 Achievement of the project

The project attained the project purpose, since an objectively verifiable indicator of its purpose; “2.5 or lower” of feed conversion was achieved. The fact was identified at the pilot farm of the project using artificial feed developed by CDCC. Additionally, all verifiable indicators for the outputs were accomplished. Regarding epidemic prevention method, a short-term expert on pathology will be dispatched, and then all the activities are going to be terminated by the end of the cooperation.

Collapse of shrimp price in the international market before and after the previous core project has begun influenced on negative impact to the development of shrimp culture industry in Madagascar. Therefore, this follow-up cooperation targeted local market of Madagascar and developed low-cost shrimp culture technology applicable to small-scale shrimp farms. It is not possible to evaluate at present about the extent of achievement of 1) the overall goal measured by number of small-scale farms who utilize project-developed technology, and 2) the super goal measured by number of small-scale shrimp farms and total area of small-scale pond because of the above change of an important assumption. It deems to be difficult to

achieve the overall and super goals in a short period.

3-2 Summary of the Evaluation Results

(1) Relevance

Relevance of the follow-up cooperation is evaluated to be high, since the direction of the project meets the Master Plan for Fisheries and Aquaculture (2004-2007) and demand of society and economy as shrimp is still important product of Madagascar for exportation even in severe market situations. Moreover, the relevance from the aspect of technological superiority of Japanese shrimp culture is to be judged as high.

(2) Effectiveness

Effectiveness of the project is evaluated to be high, since “2.5 or lower” of feed conversion, a verifiable indicator was verified at the pilot farm aiming at selling shrimp in the local market of Madagascar.

(3) Efficiency

Overall, efficiency of the project is satisfactory. Inputs such as dispatch of Japanese experts, training of the counterparts, and provision of equipment etc. have been implemented as planned fairly, and all the inputs contributed to attain the outputs. However, it should be noted that disbursement of the Malagasy budget tended to be delay and that the assignment duration of a short-term expert on pathology was short in compare to the works required.

(4) Impact

Some positive impacts have been seen such as preparation of a development plan of Malagasy government on shrimp culture to benefit small-scale farms, frequent introduction of CDCC by mass-media and high presence of CDCC and so forth. However, it cannot be concluded if the overall goal and super goal will be attained or not in a short term because of change of shrimp market situations.

(5) Sustainability

Overall, sustainability from policy, institutional, and technical aspects has become high due to the organizational reform of CDCC started from February 2006. It is remarkable that the management system of CDCC, specifically decision-making system, internal communication of CDCC, management of the facility and equipment etc., has been improved drastically by the reform. Organizational relationship between the Ministry and CDCC was also clarified. Resignation rate of the counterparts is low. The fact showed the enhancement of sustainability on CDCC to conduct the activities. Sustainability from financial aspect is precarious at present, since the source of budget is limited and the disbursement tends to be delay. The improvement depends on more efforts of CDCC to obtain the fund and a change of system for the disbursement.

3-3 Factors contributed to generate the effects

(1) Factors on planning contents

The project monitored appropriately important assumption of the project and formulated a plan of operation for the follow-up cooperation. This fact contributed largely to the attainment of the project outputs. Namely, in 2003 negative influence began to emerge in shrimp culture industry of Madagascar under sharp collapse of shrimp price in the international market. The follow-up cooperation started right after the beginning of the same year conducted a deep study at first on local market to develop shrimp culture

technology for small-scale farms in order to show them a profit. Based on the result of the market study, the project made a technical and managerial goal. This contributed to effective cooperation.

Mass production of shrimp was required in the aquaculture before, while extensive culture method with 2 shrimp per square meter as the rearing density of shrimp was adopted in this follow-up project using low cost feed made of locally available raw materials and aiming at producing shrimp of 25g or larger, which is demanded by the market. The project tackled with improving technologies on pond management, feed development, and epidemic prevention in order to achieve the above targets.

The project built a pilot farm, and conducted verification experiment. As the result, the project accomplished the targets and verified that small-scale farms can get a profit through the technology the project developed.

Shrimp culture industry is still important in Madagascar as one of the major sources for obtaining foreign currency in line with the national policy. However, boost of investment for shrimp culture tends to decline because of the above reason and source of funds that small-scale farms can utilize is limited. Therefore, technologies that the project developed and verified can't seem to be put into practice in a short period.

On the other hand, the Malagasy government has been making efforts for small-scale shrimp culture extension at CDCC for the future by obtaining funds of "Projet de Soutien au Développement (PSDR)", for example. The technology developed by the project can be disseminated when shrimp market will be recovered and small-scale farms will aim on local market of Madagascar.

(2) Factors on implementation process

Regarding ways of technical transfer, preparation of manuals sum up technologies the project developed and it encouraged positive activities of counterparts. Especially, from the latter half of the project period, the counterparts could prepare manuals by themselves positively. This contributed to accumulation of technologies in CDCC.

As for the management system of the project, status and position of CDCC were unclear. There were lots of problems on decision-making and internal communication, management of the facility and equipment, and un-collection of money of the sales, when the follow-up cooperation started. Afterwards, the Malagasy government continued the efforts to solve those problems in cooperation with the Japanese experts and reformed successfully. In November 2005, most of these problems were settled by the reform. So that sustainability of CDCC was enhanced.

3-4 Constraints and factors caused by the problems

(1) Factors on planning contents

It was evaluated that duration for technical guidance of a Japanese expert on epidemic prevention was short. One more Japanese expert on the same field is planned, and the activities are going to be finished by the end of the follow-up cooperation. However, it might be a problem that the project did not include any countermeasures on diagnosis and prevention against virus-derived diseases in the plan because the serious damage may take place, if once occurred.

(2) Factors on implementation process

When the follow-up project started, status, position, and organizational structure of CDCC were not clarified. So that CDCC had many problems on personal affairs, budget, management of facility and

equipment, decision-making and internal communication etc. Some experiments that the project had planned were canceled under such circumstance. However, few negative influences were observed in the project activities. This is due to efforts of the stakeholders. In addition, great efforts and time were consumed to improve administrative capability of CDCC.

From financial aspects, an issue still remains such as chronic shortage of source of budget, delay of disbursement of the budget from national fund. This has influenced the operation of the project. Moreover, it may remain a problem on the future operation of CDCC, unless some effective measures are taken.

3-5 Conclusions

The result of the terminal evaluation shows that the project purpose was attained. Because the project could verify that technology developed by the project is profitable for small-scale farms by monitoring the situation of a change of shrimp price appropriately. However, two conditions must be cleared in order to attain the overall and super goals. Namely, when small-scale shrimp farms becomes to be interested in local market in Madagascar and eager to ship their products to the same market, and also obtain fund for investment to shrimp farming pond preparation, they will put into practice the technology verified by the project. Then, small-scale shrimp culture will be developed in the Northwest Coastal Region of Madagascar.

The results of five evaluation criteria show as follows. Relevance is judged to be high, especially from an aspect of the policy of the Malagasy government. Effectiveness is also high judging from the achievement level of the project purpose and outputs. Efficiency is satisfactory overall, while it was pointed out the delay of disbursement of the budget from the Malagasy side was pointed out. Some positive impacts were seen, such as high presence of CDCC etc. However, possibility to attain the overall goal and super goals is invisible at present. Sustainability from organizational, technological, and political aspects is evaluated to be high, on the other hand, that from financial aspect is low.

3-6 Recommendations

- (1) The production of shrimp in Madagascar has been increasing. Consequently there is rising concern over spread of virus disease of shrimp. Considering one of the functions of CDCC; provision of shrimp seeds for small-scale farmers, the project should investigate necessary measures which have to be taken to avoid risks of virus infection on seeds in the remaining period of project.
- (2) The Ministry of Agriculture, Livestock and Fisheries should take necessary measures to allocate rational amount of budget to cover the operational expenditure. Correspondingly, CDCC should make utmost and continuous effort to strengthen management foundation by diversifying and expanding self-generated revenue. Collaborative project with Rural Development Support Fund (PSDR) and undertaking of restocking shrimp seeds shall be considerable measures.
- (3) CDCC should tackle seed production of shrimp in order to release shrimp seeds to the natural environment for recovery of shrimp resources and strengthening financial basis of CDCC.
- (4) In order to respond the regional needs as well as effective utilization of the facilities and capability of CDCC, CDCC should diversify target species. In terms of marketability and technical applicability, Tilapia is the most promising species.

3-7 Lessons Learned

(1) Importance of capacity building

Positive efforts made by both Japanese and Malagasy parties made positive efforts to improve management and operation system of CDCC. It contributed to enhancement of organizational sustainability of CDCC.

(2) Effectiveness of market study

Results of the market study conducted in the beginning of the follow-up cooperation contributed to implementation of the effective activities by setting up concrete and realistic objectives from both technical and business aspects.

(3) Usefulness of low cost technology

To assure a possibility of the technology extension for small-scale farms, the project demonstrated low cost model of aquaculture technology by making efforts for the technical devices such as green house, simple solar power system, using manure, modification of hammer mill and so on. This model can be used for the technical extension in the future.