

Highlands Aquaculture Development Project



Project Site

Aiyura (Eastern Highlands Province)

1. Background of Project

In the highlands of Papua New Guinea, which occupy 70% of the total area, most people live by subsistence farming, and the shortage of animal protein and lack of employment opportunities were problems in the villages. To overcome these problems, the Government of Papua New Guinea, in response to advice by the FAO in the 1980s, established the Highlands Aquaculture Development Center to promote fish farming in inland waters of the highlands. But due to a lack of human resources, materials and equipment, the Center did not function as planned. Therefore, the Government of Papua New Guinea officially requested the Government of Japan to provide technical co-operation. The Government of Japan dispatched Individual Experts from 1993, and in 1996 when the Center was transferred from the National Fisheries Authority to the care of the Government of the Eastern Highlands, this project started by appointing the Eastern Highlands Provincial Government as the implementing agency.

2. Project Overview

(1) Period of Cooperation

23 June 1996-22 June 1999

(2) Type of Cooperation

Expert Team Dispatch Program

(3) Partner Country Implementing Organization

The Government of Eastern Highlands Province

(4) Narrative Summary

- 1) Overall Goal
Aquaculture in the highland regions is promoted.
- 2) Project Purpose
Technical capacities of aquaculture in the highlands are enhanced.
- 3) Outputs

- a) Fry production is increased.
- b) Training for aquaculture extension is conducted.
- c) Experimental research for appropriate technology for aquaculture is conducted.

4) Inputs

Japanese Side

Long-term Experts	3
Short-term Experts	4
Trainees received	10
Equipment	approx. 37 million yen
Local cost	approx. 24 million yen

Papua New Guinea Side

Counterparts	12
Land and facilities	
Local cost	286,000 kina (approx. 17.0 million yen)

3. Members of Evaluation Team

Team Leader:

Kiyoshi SAKAI, Associate Professor, Tokyo University of Fisheries

Fisheries Development:

Hiroshi IKENOUE, Fisheries and Aquaculture International Co., Ltd.

Coordination and Co-operation Planning:

Yoshihiro SATO, Training Division, Kanagawa International Fisheries Training Center

4. Period of Evaluation

28 June 1999-8 July 1999

5 Results of Evaluation

(1) Efficiency

While implementing this project, there were several difficult conditions such as the change of competent

authority of the Aquaculture Development Center through organizational reform in the Government of Papua New Guinea, personnel changes also through the reform, a drought in 1997, and public disturbances at the project sites. Despite these problems, many outputs were achieved in the relatively short three-year period. In addition to technical training given by the expert team, it was concluded that the materials, equipment, local administration costs and renovation of the aquaculture facilities were input efficiently. From this point of view, the project was evaluated to have been implemented efficiently.

(2) Effectiveness

The project achieved several outputs: one million fries for carp farming were produced each year, more than 250 participants received training at the Center, and experiments on new types of fish and technologies were conducted. Therefore, the project purpose was mostly achieved.

(3) Impact

Through the provision of an increased number of fries from the Center, small-scale aquaculture of carp and rainbow trout were spread. As a result, farmers who used to depend mainly upon sweet potatoes for their food intake were now eating fish and earning cash, with subsequent changes to lifestyle. As a result, people in the coastal regions became interested in these changes and small-scale aquaculture, and it was expected that small-scale aquaculture would expand beyond the highland areas throughout the country.

(4) Relevance

Although the competent authority for the Highlands Aquaculture Development Center was initially the Department of Fisheries, which was reorganized to the National Fisheries Authority, the Authority was required to implement projects on a self-supporting basis by the Government of Papua New Guinea. Therefore, the Authority pulled out of any venture that did not make a profit in a short period, such as small-scale industry extension for small-scale farmers. In line with the policy of decentralization in Papua New Guinea, the Eastern Highlands Provincial Government came to be the competent authority for the Center, but the Government did not have any specific development plan that supported the overall goals of the project.

However, after the impacts of aquaculture projects on the intake of animal protein and employment creation became clear, the National Food Policies formulated by the Government of Papua New Guinea, listed small-scale aquaculture as an important policy, and accordingly the project was justified in the context of the National Policy.

Therefore, the project has high relevance.

(5) Sustainability

As mentioned above, the project initially experienced organizational and financial instability in the implementing agency, but after 1998 when the project outputs were identified, the budget for the project in the Provincial and Central Government were increased. Technically, the counterparts acquired sufficient technologies for the production of carp fries and indeed, the output of fries increased. However, despite the increase of fries output, the Center cannot manage to sell the products on its own. Also in the administration and management of the Center, it was not enough to be self-reliant as it depended on the Japanese experts.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Due to economic stagnation in Papua New Guinea, Government support was too unstable to ensure the sustainability of overseas technical co-operation. Therefore, when similar projects are introduced in the country, it is important that not only assistance for technology transfer is provided, but also support for a sustainable management system.

(2) Recommendation

In order to promote sustainability for the Aquaculture Development Center, it was recommended that experts in training, planning, implementation and management of all activities in the Center be dispatched for at least two years. Also, for technical extension activities in the remote regions where the experts cannot provide support, Japan Overseas Cooperation Volunteers (JOCV) in the areas of carp and trout should be dispatched.

7. Follow-up Situation

In response to the recommendation above, an Individual Expert "Freshwater Aquaculture Advisor" and two JOCVs in fish farming were dispatched on 24 May 2000 for two years.

Also, to further spread the outputs of the co-operation, a five-year In-country Training Program called "Fresh Water Aquaculture Course" has been conducted since 2000.

The Forest Research Project (Phasell)



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1. Background of Project

Since its independence in 1975, Papua New Guinea has been utilizing forest resources, which has contributed to the economic development of the nation. As sustainable development of forest resources is indispensable for economic development, PNG recognized that more thorough study was necessary for the preparation and conservation of forest resources and the effective utilization of timber. Consequently, Japan began "The Forest Research Project" (April 1989 to March 1994) under its technical cooperation scheme. Also, the Grant Aid project "The Project for Establishment of Forest Research Institute (1987)", supported the construction of an institute that is the base to promote research of forestry and the forest industry. The projects were appreciated by the Government of Papua New Guinea, which requested further support for research in the sustainable development and conservation of forests.

2. Project Overview

(1) Period of Cooperation

1 April 1995-31 March 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

Papua New Guinea Forest Authority (PNGFA), Forest Research Institute (FRI).

(4) Narrative Summary

1) Overall Goal

Comprehensive management guidelines for sustainable management of forest resources formulated based on the result of research undertaken in FRI.

2) Project Purpose

FRI develops capability to undertake research on sustainable management of forest resources.

3) Outputs

The following items are realized in each of the following three fields: natural forest management, planted forest, and forest biology:

- a) Researchers acquire the necessary skills to realize the overall goal in the field of sustainable management of forest resources in FRI.
- b) Research results, research methods, standardized research system, database and so on, which are expected to contribute to the realization of the overall goal, are acquired/formulated in the field of sustainable management of forest resources in FRI.
- c) Experimental forests, research equipment and so on, which are expected to contribute to the realization of the overall goal, are established/installed in the field of sustainable management of forest resources in FRI.

4) Inputs

Japanese Side

Long-term experts	7
Short-term experts	19
Trainees received	14
Equipment	approx. 98 million yen
Local cost	approx. 37 million yen

Papua New Guinean Side

Counterparts	27
Land, facilities and experimental forest	
Local cost	9.2 million kina (approx. 375 million yen)

3. Members of Evaluation Team

Team Leader/ Forest Biology:

Tomoyuki FUJII, Chief of World Forest Resources Research Team, Research Planning and Coordination Division, Forestry and Forest Products Research Institute (FFPRI), Ministry of Agriculture, Forestry and Fisheries (MAFF)

Forest Management:

Ken SUGIMURA, Chief of Environmental Management Laboratory, Resources Management Section, Forest Management Division, FFPRI, MAFF

Silviculture:

Takashi MASAKI, Senior Researcher of Silviculture Laboratory, Silviculture Division, Tohoku Research Center, FFPRI, MAFF

Planning Evaluation:

Akinao ONISHI, Forestry and Fisheries Development Cooperation Department, JICA

Evaluation Analysis:

Jiro IGUCHI, PADECO Co., Ltd.

4. Period of Evaluation

6 November 1999-19 November 1999

5. Results of Evaluation**(1) Efficiency**

Inputs, such as the provision of machinery and equipment, Dispatch of Experts, and counterpart training, were appropriate to achieve the expected outputs. Close cooperation between experts and counterparts, and efficient technical transfer were achieved by dispatching experts who had the appropriate specialties on an ongoing basis. However, the dispatch of short-term experts was not on schedule for the first two years of the project, which caused the delay of technical transfer for the counterparts. Therefore, some of the counterparts expressed their anxiety to continue the research without support. Another factor that made the project less efficient was that some counterparts were removed following organizational reform in 1999.

(2) Effectiveness

The project provided sufficient equipment and buildings, and trained a sufficient number of staff for the research. The program leaders in each research field acquired the capability to give a presentation on their research results. For example, on the subject of "tree breeding", among the research topics related to natural forest management, four academic thesis, three reports in technical training and two interim reports were produced. Though the sustainability of the institute as the base for research is still unstable, it was concluded that the project purpose was practically achieved, in consideration of the current condition of the research and the staff of the institute.

(3) Impact

The project revealed what impact early ripening varieties of trees have on ecological conditions of natural forests and second growth forests, and planted forests. This knowledge provided the institute with the ability to



A expert giving a lecture on seedling growth techniques

estimate crop yields, which is useful for setting guidelines for sustainable forest resources management.

(4) Relevance

The project is relevant in correlation with "The National Forestry Development Guidelines" developed in 1993, which states the importance of forest research and the role of FRI in the research project. In addition, the enhancement of the researchers' skills matches the needs of FRI.

(5) Sustainability

The role of FRI became vague following the reformation of PNGFA (to which FRI belongs) in 1999. In addition, the project faced financial difficulty because of devaluation of the currency. From a technical point of view, the institute and counterparts were not considered to have acquired the ability to plan and conduct substantial research on a long-term basis. Thus, further support from the Government of Japan was viewed as necessary.

6. Lessons Learned and Recommendations**(1) Lessons Learned**

It is important to confirm the stability of implementing agencies in advance to enable efficient technical transfer.

(2) Recommendations

Follow-up cooperation is necessary to enhance the counterparts' skill to complete the research of each three topics and to plan and implement larger scale research projects on a long-term and strategic basis.

7. Follow-up Situation

In consideration of the above recommendation, two years of Follow-up cooperation will be in implementation through 31 May 2002.