

Terminal Evaluation

Middle East

1. Outline of the Project

Country:

Turkey

Project title:

The Project for the Fish-Culture Development Project in the Black Sea

Issue/Sector:

Fisheries

Cooperation scheme:

Project-type Technical Cooperation

Division in charge:

Fisheries and Environment Division, Forestry and Natural Environment Department

Total cost:

790 Million Yen

Period of Cooperation

16 April 1997-15 April 2002

Partner Country's Implementing Organization:

Central Fisheries Research Institute at Trabzon (CFRI), Ministry of Agriculture and Rural Affairs

Supporting Organization in Japan:

Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries
Ministry of Education, Culture, Sports and Science and Technology
Tokyo University of Fisheries
Kagoshima University

Related Cooperation:

N/A

1-1 Background of the Project

The Government of Turkey, in its Five-year Development Plans (1996-2000), has given a high priority to fishery. Especially the government of Turkey regarded aquaculture development as indispensable for management and conservation of fisheries resources. Under these circumstances, the Turkish Government requested Japan to provide Project-type Technical Cooperation to develop aquaculture techniques and transfer them to Turkish researchers.

1-2 Project Overview

In order to develop flatfish culture technology and to transfer it to the Central Fisheries Research Institute (CFRI), this Project carried out taxonomic and biological research, artificial insemination tests and breeding environment research.

(1) Overall Goal

Fish culture technology developed through the Project activities is put into practice and its effectiveness is verified.

(2) Project Purpose

Seed Production and rearing techniques of flatfish species are developed.

(3) Outputs

- 1) A target flatfish species is identified.
- 2) Brood stock rearing techniques of flatfish are developed.
- 3) Spawning techniques are developed.
- 4) Rearing technique is developed with respect to young and sub-adult Black Sea turbot.

- 5) Larva/Juvenile rearing techniques are developed.
 6) Research and management capability of counterparts is improved.

(4) Inputs

Japanese side:

Long-term Experts	5	Equipment	165 Million Yen
Short-term Experts	18	Local Cost	34 Million Yen
Trainees received	11	Others	31 Million Yen

Turkish side:

Counterparts	8		
Local Cost	2,320 Million Lira (23 Million Yen)	*Rate of March 2001	

2. Evaluation Team

Members of Evaluation Team

Team Leader: Hideki MIYAKAWA, Managing Director, Forestry and Natural Environment Department, JICA
 Seed Production: Yasuhiko TAKI, Executive Director, Japan Wildlife Research Center/ Professor Emeritus, Tokyo University of Fisheries
 Cultivation Technology: Akio IWAMOTO, Director, Yashima Station, Japan Fish-Farming Association
 Evaluation Analysis: Hideaki HIGASHINO, Rex International Co.
 Plan Management: Yoshihiro SATO, Fisheries and Environment Division, Forestry and Natural Environment Department, JICA

Period of Evaluation	13 January 2002 - 26 January 2002	Type of Evaluation:	Terminal Evaluation
-----------------------------	-----------------------------------	----------------------------	---------------------

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

In the seventh (1996-2000) and the eighth (2001-2006) Five-year Development Plans, the Government of Turkey assigned high priority to fishery development. In these development plans, the Government emphasized modernization, aquaculture, management and conservation of fisheries resources. Aquaculture is particularly emphasized and the government took technical and economical preferential measures to stimulate investment by private companies and foreign capital.

The Eastern Black Sea Region, where the Project site is located, lagged behind other regions in development. In order to maintain a balance with the other areas and remove the income disparity, development of industries in this area was necessary. Black Sea Turbot is a luxury product with a high market value, and its cultivation became the focus of interest. Therefore, the Project is highly relevant, since it targeted the Eastern Black Sea Region and focused on Black Sea Turbot.

(2) Effectiveness

The Project has achieved one of the indicators ("establishing stable production of juveniles larger than 100 millimeters in length") in terms of the number of juveniles as planned. But the counterparts are still incapable of maintaining the level without guidance and advice by the dispatched experts. Especially, stabilization of the survival rate of young and sub-adult fish and the techniques of spawning from cultivated parent fish remains an issue.

Therefore, the effectiveness of the Project is judged to be at a medium level.

(3) Efficiency

Inputs from the Japanese side were appropriate in terms of the amount and the timing. There is no problem in the management and utilization of the machinery. Though some of the facilities were constructed and established by the Turkish side, the maintenance and management system for the water intake, filtering and temperature control have not been established. As a result, the troubles with the water intake system could not be solved, which resulted in the death of young and sub-adult fish, and these stagnated Project activities. The technology transfer to counterparts was done smoothly, and the stability of the work force was at an appropriate level. However, the head of CFRI changed ten times in the last five years, which affected the progress of the Project.

(4) Impact

The Overall Goal of the Project ("Fish culture technology developed through the Project activities is put into practice and its effectiveness is verified") has not been achieved yet. However, some positive impacts have been observed. For example, the aquaculture farmer became able to pay more attention to seed production techniques for Black Sea Turbot and the relationship among CFRI, fishermen and their associations were strengthened. Also CFRI gained more publicity. Negative impacts have not yet been observed. However environmental pollution is often a concern of aquaculture, and continuous attention should be paid.

(5) Sustainability

The maintenance and management system for the water intake, filtering and temperature control, which delayed the progress of the Project, have not been established yet. Frequent changes of the head of CFRI had a negative impact on the establishment of a close relationship between the center and the Project. Although the Project site was under the authority of the General Directorate of Agricultural Research Institute, it is planned that it will come under the authority of the Agricultural Production Development, under whose authority the Project has been. It is necessary for the Project to clarify the relationship with the latter, in order to continue the activities. The sustainability of the organization and institution is considered to be low.

In the financial aspect, there was no problem in the local cost at the budget base. However, it has been difficult to grasp the exact cost, because the Project budget is not divided from that of CFRI. It is necessary check the cost annually. Due to the economic crisis, it may become difficult to secure running costs. Thus, it is considered that the financial sustainability of the Project is at the medium level.

The technique for stabilization of the survival rate of young and sub-adult fish and spawning from cultured parent fish have not been transferred yet. However, the technology transfer in practice is progressing well, and the technical sustainability is high.

3-2 Factors that promoted realization of effects

(1) Factors concerning Planning

The appropriate Project Purpose was set.

(2) Factors concerning the Implementation Process

The motivation of the counterparts was high on the whole. The training in Japan contributed to improvement of their capacities and techniques.

3-3 Factors that impeded realization of effects

(1) Factors concerning Planning

There was insufficient consensus with the Turkish side about the monitoring system of the Project. It took a long time to solve this problem.

(2) Factors concerning to the Implementation Process

The seed production was hindered by the following problems: extreme weather conditions such as high waves damaged the water intake facilities. This caused problems in the control of temperature and the quality of the water; in the breeding season of 2001, there was an outbreak of zooxanthella species, which led to deterioration of filtration. The maintenance and management system for water intake, temperature control and water purification were defective.

3-4 Conclusion

Although technical transfer was carried out smoothly, there were some concerns for the sustainability in maintaining the stability of seed production. Improvement in the survival rate of the young and sub-adult fish and establishment of spawning techniques have not been completed.

3-5 Recommendations

(1) CFRI must allocate a staff in charge of management and maintenance of the hatchery including the water intake, filtering and temperature control systems.

(2) The Turkish side needs to offer training opportunities to the private sector and disseminate the developed techniques, in order to achieve the Overall Goals. The exchange of information and communication is important among those who are in the field of research. Communication among the concerned agencies should be established by providing opportunities to communicate and exchange information on a regular basis.

3-6 Lessons Learned

Management and maintenance of the facility is an important prerequisite to carry out a technical transfer. A complete consensus on facility maintenance and management should be achieved prior to Project commencement.

3-7 Follow-up Situation

Following the Recommendations, a follow-up cooperation for two years and a half is being conducted. It focuses on improving the survival rate of young and sub-adult fish and establishing the techniques of spawning juveniles from parent fish. The follow-up continues until October 2004.