Turkey

The Port Hydraulic Research Center

Project Site Ankara

1. Background of Project

Turkey, which is located at the interface of Europe, the Middle East, Caucasus and Central Asia, had an urgent need to establish and develop new ports to address the growing amount of export-import cargo. Although an accurate design and plan based on scientific data is necessary for the construction of highly reliable port facilities, the General Directorate of Railways, Ports, and Airports Construction (DLH) did not have any laboratories for such activities. Considering this, the Turkish Government planned to establish the Port Hydraulic Research Center in order to develop rational and economical technologies for designing and planning the port buildings. The Government then requested Project-type Technical Cooperation from the Japanese Government to achieve this goal.

2. Project Overview

(1) Period of Cooperation

1 January 1995-31 December 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

General Directorate of Railways, Ports and Airports Construction (DLH)
Port Hydraulic Research Center

(4) Narrative Summary

1) Overall Goal

Port buildings are rationally and economically designed in Turkey.

2) Project Purpose

The Port Hydraulic Research Center capable of carrying out research work in the field of hydraulic model tests, physical and numerical model experiments and field investigations is established.

3) Outputs

a) The necessary facilities and equipment are provided for the Center.
b) The organizational structure of the Center is established.
c) Turkish counterparts are able to carry out hydraulic model tests, numerical model experiments and field investigations.

4) Inputs

Japanese Side

Long-term experts	6
Short-term experts	34
Trainees received	9
Equipment	approx. 364 million yen
Local cost	approx. 13 million yen

Turkish Side

Counterparts	10
Land and facilities	
Local cost	approx. 387.5 billion lira (approx. 69 million yen)

3. Members of Evaluation Team

Team Leader:
Masayuki WATANABE, Development Specialist, JICA

Port and Harbor Policy:
Takashi KADONO, Director, Sakata Port Construction Office, First District Port Construction Bureau, Ministry of Transport

Hydraulic Research:
Noriaki HASHIMOTO, Director Hydrodynamics Laboratory, Marine Environment Division, Port and Harbour Research Institute, Ministry of Transport

Evaluation Planning:
Ryuhei MIZUTANI, Special Advisor, Second Technical Cooperation Division, Social Development Cooperation Department, JICA

Evaluation Analysis:

Kaoru IWAKAWA, PADECO Co., Ltd.

4. Period of Evaluation

7 September 1999-19 September 1999

5. Results of Evaluation

(1) Efficiency

The inputs on the Japanese side, such as Dispatch of Experts, counterpart training and provision of equipment, were carried out on schedule, and the quality, quantity and timing of inputs were generally appropriate. The construction of the Port Hydraulic Research Center was also completed as planned as a whole.

(2) Effectiveness

The project outputs were mostly accomplished following the plan as the counterparts became capable of conducting field research, hydraulic testing of multi-directional random waves, as well as numerical model experiments. However, achievement of the project purpose in terms of establishment of the Center was not completely successful. The amount of experimental data accumulated by researchers was still insufficient for continuing effective research activities. This was considered a result of the short time period of technology transfer, which was carried out by experts for only two years after the first three years of the cooperation. During the first three years of the project, activities were concentrated on the establishment of the infrastructure and the installation, set up, and coordination of the buildings and facilities. Therefore, the remaining period for research and transfer was not long enough for the sufficient gathering of the necessary data for the analyses.

Moreover, counterparts had not gained enough experience even in the areas where technology transfer had been completed, such as plane water tank experiment for harbor tranquility analysis to the extent to able to investigate the causes of damage and revise design methods accordingly when the port facilities were damaged. Also, the management systems for research activities and facilities were not yet established since this was not stated in the project purpose.

(3) Impact

Significant effects of the project were not yet observed at the time of evaluation since it was only about two years after the opening of the Center. However, the Center and its state-of-the-art research facilities were introduced at conferences in Europe, so it was becoming well known to researchers in this field. Hence, the Center was expected to take on a leading role in the field of port hydraulic study both within Turkey and in the countries along the East Mediterranean and Black Sea.

(4) Relevance

In Turkey, there was a rapidly growing need for the construction of new ports and for personnel able to design projects based on a port hydraulics view. Therefore, the overall goal and the purpose of the project were considered highly relevant to the Turkish needs for the development of port facilities.

(5) Sustainability

The Center was clearly recognized as part of the national administrative network and its organizational sustainability was expected to be maintained. Nevertheless, the management systems for the research activities, facilities, and general affairs were not fully established.

In terms of technical sustainability, there were some engineers with a high technical capability among the Center's port hydraulic researchers and they had been contributing to the improvement of the port engineering technologies in Turkey. However, the number of researchers was still insufficient for the further development of the research activities, although this issue was being addressed.

6. Lessons Learned and Recommendations

(1) Lessons Learned

The establishment of the Center's management system was not defined as a cooperation component in this project. When the project aims at the building of organizational functions, the establishment of the management system should be included in the activities and defined as a part of project outputs. The Dispatch of Experts who are able to give long-term guidance was also considered to be necessary.

(2) Recommendations

The project purpose initially agreed to in the plan was generally accomplished, thus the project was terminated at the end of 1999. The enhancement of the research management system, the establishment of the department in charge of management of facilities and general affairs, and the additional recruitment of research fellows were all deemed necessary in order to further strengthen the Center's sustainability.

7. Follow-up Situation

In order to strengthen research activities, an Individual Expert (Coastal Engineering) was dispatched in May 2002 for two years.