

The National Center for the Environment



Project Sites Santiago

1. Background of Project

In the Republic of Chile, environmental pollution such as air pollution caused by vehicle exhaust gases, water pollution from factories and households, and general waste, became a significant problem accompanying industrial and economic development as well as the population concentration in the Santiago Metropolitan area.

Due to the situation, the Chilean Government sought to establish a center to conduct training, research and development relevant to environmental matters, as well as environmental information. They requested Project-type Technical Cooperation from the Japanese Government to achieve this goal.

2. Project Overview

(1) Period of Cooperation

1 June 1996-31 May 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

National Commission for the Environment (CONAMA), The University of Chile

(4) Narrative Summary

- 1) Overall Goal
To formulate and implement appropriate environment protection policies in the Republic of Chile.
- 2) Project Purpose
To enable the center to conduct training, research and development relevant to environmental matters, as well as to provide environmental information.
- 3) Outputs
 - a) To develop methods to simulate and forecast air pollution episodes in order to alleviate heavy air contamination over the Metropolitan Region.
 - b) To develop methodologies for water quality evaluation and treatment techniques.
 - c) To develop methodologies for the analysis of industrial solid wastes and to evaluate the current

methods of disposal.

- d) To develop methodologies for the analysis of air pollution as well as methods to monitor air quality.
- e) To contribute to the establishment of an environmental information system in both the Metropolitan region and the national level.
- f) To facilitate human resources development.
- g) To enhance environmental impact assessment and environmental management systems.
- h) to establish the facilities and equipment necessary to conduct the activities of the project.

4) Inputs

Japanese Side

Long-term experts	11
Short-term experts	31
Trainees received	26
Equipment	approx. 496 million yen
Local cost	approx. 35 million yen

Chilean Side

Counterparts	79
Buildings and facilities	
Equipment	288 million pesos (approx. 60 million yen)
Local cost	3.4 billion pesos (approx. 710 million yen)

3. Members of Evaluation Team

Team Leader:

Kenichi TANAKA, Development Specialist, JICA

Forecast of Air Pollution Episodes:

Masanobu HIRASAWA, Head, The Third Research Laboratory, Meteorological Research Institute, Japan Meteorological Agency

Water Quality and Industrial Liquid Wastes:

Toro NAKAHARA, Senior Researcher, National Institute of Bioscience and Human-Technology, Ministry of International Trade and Industry

Management of Industrial Solid Wastes:

Kiyoshi KAWAMURA, Director-Engineer and Manager, Osaka City Government

Air Quality Control:

Takashi UEHIRO, International Coordination Researcher, National Institute for Environmental

Studies, Environment Agency

Evaluation Analysis:

Atau KISHINAMI, PADECO Co., Ltd.

Evaluation Planning:

Takashi MIZUNO, Deputy Director, Second Technical Cooperation Division, Social Development Cooperation Department, JICA

4. Period of Evaluation

1 November 1999-13 November 1999

5. Results of Evaluation

(1) Efficiency

Inputs from the Japanese side, such as the dispatch of both long-term and short-term experts, the training of counterparts, and provision of facilities, as well as the allocation of operational costs on the Chilean side were carried out on schedule. However, reconstruction of the Center was delayed due to the change of the head of the National Commission for the Environment and some counterparts were not assigned in the planned positions for the first three years. These negative factors disrupted the progress of some of the activities.

(2) Effectiveness

Continuous trainings by both long- and short-term experts leading to the realization of the project purpose as well as counterparts' strong desire to acquire techniques enabled the technology transfer in various areas including the air pollution forecast. In particular, inventory activities that are conducted in order to detect the source of pollution were found to have achieved a higher performance than planned. However, other activities, such as experimentation, and information gathering and analysis, progressed slowly because the reconstruction of the Center was completed one and a half years after the beginning of the project. Some training courses were also delayed. Therefore, the project purpose had not yet been achieved.

(3) Impact

It is difficult to judge the achievement of the overall goal when the project purpose is not completely accomplished. However, some impacts of the project could be observed in the University of Chile in which The National Center for the Environment (CENMA) was established. Various disciplines and departments, such as agriculture, pharmacology, medicine, economy and architecture, started to give technical advice to the center and an inter-disciplinary exchange of opinions among these departments became active.

(4) Relevance

The project matched the needs of the current environmental policy of the Chilean Government, which sought to measure the level of air and water pollution and reflect the results to public services. Following the previous administration, the Frei administration, which began in March 1996 after the project commenced, continued to actively tackle environmental issues. Thus, the relevance of the project was considered high.



An evaluation meeting

(5) Sustainability

The organizational structure of CENMA was strengthened since a representative from CONAMA, who was appointed by the Ministerial Committee, joined the Board of Directors of CENMA and is involved in its management. In terms of financial sustainability, the allocation of the budget focused on achieving the goals of the project, and the budget is expected to remain at the same level after project completion. However, it was recommended that the Center secure its own sources of revenue by charging fees for technical services, as well as reform its financial structure in order to strengthen sustainability. Further technical improvement of the CENMA through the development of human resources is also needed.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It is essential that buildings and facilities that serve as the base for the activities be established prior to the project implementation in order to carry out the project as planned. It is also vital to consider the budgetary procedures of the beneficiary country in the process of planning when the cost of fundamental facilities is to be covered by them.

(2) Recommendations

Although impacts of the technology transfer appeared, the project purpose was not achieved satisfactorily due to the delay in the reconstruction of CENMA. On the other hand, it was viewed that the Chilean side fulfilled the institutional and financial conditions required by Japan in that the University of Chile established an executive committee and advisory council for the project. Considering this, a two-year extension of the cooperation was recommended based on the specific components that were not completed.

7. Follow-up Situation

Following the above-mentioned recommendation, a two-year Follow-up cooperation ending 31 May 2001 was implemented in order to improve analytical skills in the laboratory and establish an information network enabling the center to disseminate the results of cooperation.