

Terminal Evaluation

Latin America and the Caribbean

1. Outline of the Project

Country:

Chile

Project title:

The National Center for the Environment Project

Issue/Sector:

Environment

Cooperation scheme:

Project-type Technical Cooperation

Division in charge:

Second Technical Cooperation Division, Social Development Cooperation Department

Total cost:

1,587 Million Yen

Period of Cooperation

1 June 1995 - 31 May 2000
Extended period
1 June 2000 - 31 May 2002

Partner Country's Implementing Organization:

Comision Nacional del Medio Ambiente (CONAMA)
Universidad de Chile

Supporting Organization in Japan:

Ministry of the Environment (MOE)
Japan Meteorological Agency, Ministry of Land, Infrastructure and Transportation
Ministry of Economy, Trade and Industry (METI)

Related Cooperation:**1-1 Background of the Project**

In Chile, environmental pollution such as air pollution by exhaust gas, water pollution by drainage from factories and households, and general waste, was a serious problem brought on by the industrial and economic development as well as population concentration in the Santiago Metropolitan area. Under these circumstances, the Government of Chile planned to establish the National Center for the Environment (Centro Nacional de Medio Ambiente: CENMA) to conduct research and development, provide information, develop human resources and provide support to the Environmental Impact Assessment system and its implementation. The Government of Chile requested the Government of Japan to provide Project-type Technical Cooperation in October 1992.

Based upon the request, JICA together with CONAMA and the Universidad de Chile as the implementing organization commenced 5-year technical cooperation to CENMA settled in Universidad de Chile in June 1995. The cooperation covered the following five fields: (1) Weather forecast for air pollution, (2) industrial drainage and water quality management, (3) industrial discharge management, (4) air pollution management and (5) provision of information on the environment and environmental training. However, through the terminal evaluation in 1999, both the Japanese and Chilean sides mutually understood that there were remaining unaccomplished issues among the Project fields other than the field of weather forecast for air pollution. Upon this evaluation result, the Project was extended two years till May 2002.

This evaluation covers the activities implemented in the extended two years.

1-2 Project Overview**(1) Overall Goal**

To formulate and implement appropriate environmental protection policies in Chile.

(2) Project Purpose

To enable CENMA to conduct training, research and development relevant to environmental issues, as well as to provide environmental information.

(3) Outputs

- 1) Development of methods to simulate and forecast air pollution episodes in order to alleviate heavy air contamination over the Metropolitan Region (MR).
- 2) Development of methodologies for water quality assessment.
- 3) Development of methodologies for characterization of industrial solid wastes.
- 4) Development of methodologies for air quality analysis and monitoring.
- 5) Contribution to the establishment of an environmental information system in both the MR and at the national level.
- 6) Development of human resources.
- 7) Establishment of the facilities and equipment necessary to conduct the activities of the Project.

(4) Inputs

Japanese side:

Long-term Experts	7	Equipment	71 Million Yen
Short-term Experts	19	Local Cost	27 Million Yen
Trainees received	10 Others		

Chilean side:

Counterparts	64 (number of staff in office in December 2001)
Land and Facilities	Land and facilities at CENMA
Local Cost	1,626 Million Pesos (323 Million Yen)

2. Evaluation Team

Members of Evaluation Team

Team Leader/General: Masami MIZUGUCHI, Senior Advisor, JICA
Air Quality Control: Takashi UEHIRO, Director, Analytical Instrumentation Lab, Environmental Chemistry Division, National Institute for Environmental Studies
Environmental Information: Mamoru TEZUKA, Assistant Director, Air Environment Division, Aichi Prefecture Government
Evaluation Planning: Daijiro KATO, Staff, Second Technical Cooperation Division, Social Development Cooperation Department, JICA
Evaluation Analysis: Isao DOUJUN, Consultant, Chuo Kaihatsu Corporation

Period of Evaluation

15 December 2001 - 23 December 2001

Type of Evaluation:

Terminal Evaluation

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

The environmental policy of the Chilean Government adopted in 1998 is still effective at the time of the evaluation. Under the policy, it was recognized that the revision of laws and regulations and improvement of systems were necessary for the enhancement of the environmental administration model. Therefore, the Overall Goal is consistent with the needs of the Chilean environmental policy and appropriate at the time of the terminal evaluation. The purpose of the Chilean environmental policy stated "protecting environmental degradation; the major methods for the protection was the environmental impact assessment system, environmental education, quality and drainage standards, prevention plan and scientific technique research". Therefore, the Project Purpose also has met the Chilean environmental policy and the needs of CENMA, and was appropriate. The Japanese Government put the importance on the following fields in 1997; South-south cooperation support, environmental

cooperation and poverty program in the field of cooperation to Chile. The Project Purpose, therefore, is also consistent with the aid policy of the Japanese Government.

(2) Effectiveness

The achievements for the Project are described below.

Objectively Verifiable Indicators	Achievements
1 Number of research and development outputs (reports)	49 survey reports and 3 research and development outputs
2 Number of presentation in international and national academic meetings	7 presentations at international level and 3 presentations at national level
3 Environmental information provided	Daily air contamination forecast on website of CENMA; Emission inventory management system (SAIE)
4 Number of courses, seminars and workshops	6 types; total 14 training courses (270 participants); 26 seminars and workshops at CENMA, 1 national workshop (subject: "Scientific research priority areas on the national environment")

From the achievements listed above, there were enough effects in the field of providing environmental information, research and development works and training courses, and that the Project Purpose is about to be accomplished. It was more than expected at the beginning of the Project that CENMA not only implemented the survey commissioned by the governmental agencies but also promoted the activities of research and development, and the daily air contamination forecast was provided on the website of CENMA, and training courses on the environment were commenced. Judging from the above, although the Project was extended by two years because the accomplishment of the Project Purpose was not thorough enough during the five-year cooperation, the extended years succeeded to lead the Project to the accomplishment of its Purpose.

(3) Efficiency

Dispatch of both Long-term and Short-term Experts by the Japanese side was implemented mostly as planned, and techniques were efficiently transferred. With regard to the Training given to Chilean counterpart personnel in Japan, the number of participants, training period and timing were at the satisfactory level, and the counterpart personnel were satisfied with the Training, and that it is considered that the Training contributed to the efficient technique transfer. The equipment was all procured locally, and quality, quantity and input timing of the equipment were appropriate. The equipment was well utilized and managed, and it contributed greatly to promote the Project activities.

As regards the Inputs by the Chilean side, a part of the required personnel Inputs was quantitatively insufficient, and their assignment was behind schedule, but almost all counterpart personnel have been assigned appropriately, so it is expected that the counterpart personnel would work on the further development of the Project activities for making even more progress in terms of the technique transfer and the positive impacts of the Project before the termination of the Project. The funding for operational costs was obtained sufficiently though there were some problems with the procedure of execution in the beginning.

(4) Impact

There was no recognizable effect of the Project that directly contributed to the enactment of the law, acts and regulations related to the environment and to the Overall Purpose during the cooperation period. However, from the technical point of view, the Project made it possible for technical advice to be given for the implementation of the wastewater standards for industrial drainage and the related acts for preventing air pollution in the Metropolitan area, and the standards of the small quantities of ingredients were revised. Therefore, visible effects can be expected in the future.

There is a positive impact on the environment prevention policy. Santiago Metropolitan Government (administrative organization of the province) implemented regulations on automobile performance and factory operations based on the information related to "the daily air contamination forecast in the Metropolitan area" made by CENMA.

(5) Sustainability

Based on the administrative policy of the Government of Chile to realize small government, CENMA was established as an incorporated foundation of the Universidad de Chile, so it was not recognized as an official government agency. However,

related personnel recognized that the operation policy of CENMA should be amended from time to time to always be in line with national environmental policy, which is a positive factor for the Project's organizational sustainability. At the terminal evaluation, the intention of the head of CONAMA was to make CONAMA the central organization for research and development useful for the formulation and implementation of environmental policy, which also affects the organizational sustainability positively. As regards the human resources of CENMA, the organizational reform was implemented for the improvement of laboratory functions, and the number of staff and their allocation were mostly at a satisfactory level when the terminal evaluation was given. However, as CENMA is not an official government agency but an incorporated foundation, the continuous financial and political support cannot be promised by the Central Government. In the mean time, CENMA can obtain funds for its research through the research and development activities that CENMA commenced during the Project, and so it is expected that CENMA can assure operational funds by itself.

The capacity of counterparts' techniques have been improved and settled during the extension period, especially in terms of analysis. They acquired the international certification (ISO17025) for their analysis techniques, which illustrates CENMA's technical ability.

3-2 Factors that promoted realization of effects

(1) Factors concerning Planning

N/A

(2) Factors concerning the Implementation Process

- 1) Former activities of CENMA put importance on various kinds of analyses, in other words, on commissioned business. However, based on the operation policy by the head of CENMA, CENMA also places importance on research and development, which contributed to the formulation and implementation of appropriate environmental protection policies in Chile, and which enhanced the function of CENMA not only as an assessing laboratory but also as a research institute.
- 2) The activities of CENMA were widely recognized as a result of their daily air contamination forecast on their website. This enables people easily obtain information and it generates a huge positive impact for CENMA.

3-3 Factors that impeded realization of effects

(1) Factors concerning Planning

CENMA was established not as an official governmental agency but as an incorporated organization within the restriction of the Chilean governmental operation policies which aimed at small government. As CENMA is an incorporated organization, the budget allocation is not assured by law. At the planning stage of the Project, the form of incorporated organization was considered to be best for CENMA, but a continual stable financial foundation not being assured for the future remains a concern.

(2) Factors concerning the Implementation Process

N/A

3-4 Conclusion

The Project has achieved its Purpose to a considerable extent, and CENMA can conduct its daily activities in order to contribute to the formulation and implementation of environmental protection policies in Chile. Therefore, these achievements of the two-year extended Project are at the satisfactory level.

3-5 Recommendations

- (1) To lead CENMA to an established organization on environmental protection in Chile, the Chilean Government should ensure a budget for CENMA activities, and the Universidad de Chile also should support CENMA technically on a continuing basis.
- (2) It is necessary that all of the equipment and facilities used for the development of CENMA during the last seven years remain in operation at CENMA to ensure its sustainability.
- (3) Concerning the emerging needs and challenges in the field of environmental analysis at the local and global levels, it is desirable to enhance CENMA's technical level of environmental analysis.

3-6 Lessons Learned

It is the fundamental element for the implementation of the project to assure the appropriate operational budget by the implementing organization of the project, and it is a prerequisite for the activities of the project.

3-7 Follow-up Situation

Based on the above recommendations, two Short-term experts will be dispatched in FY 2003 to enhance the analysis technique of CENMA in the air and environment analysis fields.