

Optical Fiber Transmission System



Project Sites Santiago

1. Background of Project

The "Digital communication training center project" was carried out from 1992 to July 1997 with the purpose of training of engineers in the electric communication field. The project brought advantageous effects in terms of training of capable trainers and establishment of training systems, etc., which had contributed to the development of telecommunications in Chile.

After the project, the government of Chile requested Japan to hold third country group training to improve the telecommunication services of Central and South America by taking advantage of the know-how and facilities provided through the project. In 1997, the government of Japan dispatched a project formulation study team. Then, on September 9, 1997, the cooperation for the third country group training in fiber optics was formalized with the signing an agreement.

2. Project Overview

(1) Period of Cooperation

FY1997 – FY2001

(2) Type of Cooperation

Third-country Group Training

(3) Partner Country's Implementing Organization

National Telecommunication Center (CINCATEL)
National Training Institute (INACAP)

(4) Narrative Summary

1) Overall Goal

To contribute to the social and economic growth of the countries of Central and South America, through the effective development of digital communication, which is spreading rapidly in the region.

2) Project Purpose

Technology and skills of fiber optic digital transmission, and furthermore, the techniques for laying fibre optic cables above or below ground are acquired.

3) Outputs

The trainees will study and acquire the following contents:

- a) Digital communication technology
- b) Optical transmission technology.
- c) Fiber optics digital technology (PDH: Plesiochronous Digital Hierarchy)
- d) Transmitting system technology (SDH: Synchronous Digital Hierarchy)
- e) Environmental technology for fiber optics (Optical Fiber Outside Plant technology)
- f) Other, various transmission technologies.
 - ISDN (Integrated Service Digital Network)
 - ATM (Asynchronous Transfer Mode)
 - FTTH (Fiber To The Home)

4) Inputs

Japanese Side

Short-term experts	5
Trainees received	12
Training expenses	27 million yen

Chilean Side

Training expenses	13 million yen
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(5) Participant Countries

Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela.

3. Members of Evaluation team

JICA Chile Office
(Commissioned to the local consultant, Munoz & Bri-
ceno Consultants)

4. Period of Evaluation

January 2001 – March 2001

5. Results of Evaluation

(1) Relevance

The growth of the number of the Internet-host-computers in Latin America is extremely high in recent years, which is correlated with the competition for privatization in telecommunications companies. Fiber optics is an indispensable technology for the expansion of the large-capacity telecommunications network, so the technology transfer of fiber optics to third world countries through the training meets the needs of Latin American countries.

(2) Effectiveness

With regard to technology and knowledge, at the final evaluation all of the participants achieved the level aimed at the starting point. It can be said that the project purpose was accomplished.

(3) Efficiency

Although the facilities of CINCATTEL, which was installed by a previous JICA project in 1993, and the latest Japan-made equipment available at that time was used for the training. However, the equipment and the standard would eventually become outdated, since INACAP has not been able to update them despite the rapid progress in technology.

The operation and management system of AGCI, INACAP, and JICA were excellent. Each of these agencies knows their role, and contributed to achieve the project purpose and output by proper input and implementation. Also, the problem was solved by the proper arrangement of the coordinator so as not to affect to the operation and implementation.

(4) Impact

Despite the fact that about 80% of the training participants hadn't had any experience of dealing with optical fiber, after the training, they could engage in the work around fiber optics, making use of the technology and knowledge learned.

(5) Sustainability

INACAP had a similar experience of conducting a training program in Bolivia in 1999, and it has the capability of operating in any neighborhood areas.

However, INACAP does not fully recognize the importance of regular maintenance and inspection of the equipment, in addition, there isn't any definite manual of manipulation. Sometimes there are cases when the broken equipment had been left unseparated from the properly functioning equipment. It is necessary to build up the maintenance and inspection system for more effective use.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In a project focusing on state-of-the-art technologies, such as fiber optics, etc., continuous investment in new equipment and new standards is necessary to keep in touch with rapidly evolving technical innovation.

Also, it is necessary to re-examine the contents of the training accordingly.

(2) Recommendations

It is necessary to make a written manual for maintenance and inspection of the equipment and manipulation.

Also, in order to meet the demands and to cope with the trend, it will be necessary to convert from the local standard to an international standard; i.e. ISO.