Terminal Evaluation

Asia

1. Outline of the Project

Country:
China

Project title:
Techniques on Environmental Information Network System

Issue/Sector:
Information and Communications Technology

Cooperation scheme:
In-country Training

Division in charge:
Second Technical Cooperation Division,
Social Development Cooperation Department

Total cost:
109 Million Yen

Period of Cooperation Fiscal Year 1999 - 2000

Partner Country's Implementing Organization:
National Environmental Protection Agency, Sino-Japan Friendship Center for Environmental Protection

Supporting Organization in Japan:
Ministry of the Environment (MOE)

Related Cooperation:
Grant Aid; "Project for Implementation of Environment Information Network"

1-1 Background of the Project

The Environmental Information Network Project of China was an important project as a part of the "Japan-China Environmental Cooperation Toward the 21st Century", agreed to by leaders of China and Japan in 1997. The Project realized accurate and faster information acquisition, analyzing and sharing of data through real time information exchange among the environmental information centers at municipalities and Beijing, which was to contribute to the environmental policy preparation by the Government of China. The Government of Japan provided Grant Aid cooperation on the urban environmental information network equipment (e.g., network equipment, PCs, etc.). In addition, in order to take advantage of the China-wide operation of the environmental information network developed by the Grant Aid with the smooth operation of the advanced hardware and software, both Governments agreed that the Chinese Government should implement technical training (In-country Training) to personnel in charge of the network nationwide.

This evaluation is for the In-country Training. The Grant Aid was implemented in March 2000 and June 2001.

1-2 Project Overview

To the personnel in charge of the network at the Environment Protection Bureau in 100 urban cities, the Project implemented the technical training course so trainees obtained PC operation techniques, network know-how in the field of environmental information, and development capabilities in basic application software.

(1) Overall Goal

National environmental information network is established in China.

(2) Project Purpose

Professional engineers improve their capabilities of operation, development and application of the environmental information network.

(3) Outputs

The Participants can apply the remote sensing techniques of environmental information system analysis, computer communications, network maintenance and management within a station, database techniques, development and design, and the remote sensing techniques of Geographic Information System (GIS) and information management.

(4) Inputs

Japanese side:

Short-term Expert	1
Local Cost	approx. 109 Million Yen

Chinese side:

Counterparts	60
Local Cost	approx. 24 Million Yen

(5) Participant Countries

China

2. Evaluation Team

Members of Evaluation Team JICA Chinese office
(Commissioned to: JP Ruihua EnvironTech Co., Ltd.)

Period of Evaluation November 2001 - February 2002

Type of Evaluation:
Terminal Evaluation by Overseas Office

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

The Project is relevant to the Chinese national environmental preservation policy, and the Project is highly appropriate;The National Tenth Five-Year Plan for Environmental Protection of the Chinese Government includes the improvement of the comprehensive capability and the establishment of the Chinese environmental information network through computerization in environmental administration and improvement of related capabilities of the staff.

(2) Effectiveness

Seven (7) training courses were implemented as planned by the end of 2001, and 514 staff of the information centers of Environment Protection Bureau in 100 urban cities participated in the Training (575 participants in eight training courses by the end of FY 2001) The participants learned environmental information system analysis, computer and communications techniques, maintenance and management of network within station, design and development of database techniques, and the application of GIS and remote sensing techniques in information management during the scheduled period Based on the answers to the questionnaire survey, 85 percent of the ex-participants were satisfied with the training.

(3) Efficiency

The training opportunities can be regarded as sufficiently utilized because, except for the usefulness of the textbooks, the participants were fairly satisfied with the lecturers' ability and preparation and management of training programs, including the practical training. All of the participants completed all seven training courses, and the Project was efficiently implemented. However, 62 percent of the participants were neither specialized in computer operation nor had they ever joined any kind of systematic training courses related to computers. Many of the organizations the participants worked for did not have internal LANs, and the participants had no chance to attain knowledge of networking and practical experience of using computers. The training courses were designed on the assumption that the participants would have two or more years of networking experience.

In addition, not much consideration was given when formulating curriculum to the possibility that participants with different levels of networking ability would join and result in attaining different levels of understanding. These factors had a certain negative effect on efficiency of the Project.

(4) Impact

The Training intended that the 100 organizations could fully utilize the network facilities provided through Grant Aid. Therefore, this evaluation analyzed the impact of the Project mainly by surveying the results of the study on the Environment Protection Bureau in 39 urban cities where the facilities had already been introduced.

The Environment Protection Bureau has been the participating organization since the beginning of the Chinese environmental information network project, and more than two years have already passed since they joined the Project (as of the end of 2001). As a result, the Environment Protection Bureau has attained the following positive effects: The capabilities of professional engineers were improved through the operation, development and application of the environmental system; the information network for the environmental protection system was established; and the administrative work of the environmental protection system was computerized. Ninety percent of the departments within the Environment Protection Bureauwith the facilities have already prepareda network design and a network information development plan, and 76 percent of those of the Environment Protection Bureau where facilities have not been introduced have already prepared similar plans of the network system. Judging from the above, the urban cities where facilities have already been introduced demonstrated a positive effect on the achievement of the Overall Goal, "National environmental information network is established in China". However, 61 urban cities among 100 have not introduced the facilities and did not have a chance to apply the knowledge and techniques attained in the training, which negatively affected penetration of the Project effects.

(5) Sustainability

The development of the environmental information network plays an important role in the national environmental protection and IT policy, and many sections of the Environment Protection Bureau participating in the Project are preparing to develop individual projects Therefore, there is a prospect that the Central Government or provincial governments will support the development of the network.

The Central Government and the provincial governments established a specialized environmental information center, decided to improve network operation and the maintenance system, and thus gave institutional support to the sustainability of the Project outcome According to the answers to the questionnaire survey to the organizations the participants worked for (54 out of 97 organizations responded to the questionnaire), 84 percent of the organizations will allocate a budget for continuous development of the Project outcome within five years, and stable financial support is conducted However, 57 percent of the organizations have financial difficulties At present, they have their hands full with daily organizational management and may not be able to afford to expand their scale of operations as it becomes necessary The shortage of funding can be an impediment to the future development of the Plan.

Judging from the above, the sustainability of the Project is evaluated as relatively high.

3-2 Factors that promoted realization of effects

(1) Factors concerning Planning

N/A.

(2) Factors concerning the Implementation Process

N/A

3-3 Factors that impeded realization of effects

(1) Factors concerning Planning

Many of the participants did not have the knowledge and techniques related to computer networking, and did not meet the requirements specified in the original plan of the Project which stated that the Project target was participants with computer network experience This had a negative effect on the Project.

(2) Factors concerning the Implementation Process

1) The delay of installation of the provided facilities hampered commencement of actual activities, which negatively affected the Project Sixty-one (61) urban cities among 100 did not have the necessary facilities installed, so the participants had no chance to utilize the professional techniques regarding the management, development and application of the environmental information

system which were acquired through the trainingThis negatively affected the realization of the Project effects.
2) The Project covered so many subjects that some participants had difficulty comprehending training sessions.

3-4 Conclusion

The Project was effectively implemented with the reasonable organization and training management of the implementing organization, the Sino-Japan Friendship Center for Environmental Protection, the Environment Protection Bureau"s active participation, and the participants" serious attitude toward learning and active dissemination activities as well as the national political support However, some participants had no knowledge of or experience in information networks, which adversely affected the training effects In many urban cities, the provided facilities had not yet been installed at the time of the evaluation, which had an adverse effect on the realization of the Project Purpose The shortage of funds of each Environment Protection Bureau hampered the sustainability.

3-5 Recommendations

(1) Training courses should be implemented, with participants divided into groups based on the levels of participants" basic knowledge of computers.

(2) Textbooks should be divided into a network application section and environmental information system development section, through which the Project can address the needs of environmental information management activities by region, and fulfill the needs of the personnel engaged in different types of work.

(3) A file management system should be established for each participant This can be utilized, after the termination of the training, for the follow-up survey of the training effects, or the implementation of the upgrade training for the ex-participants.

(4) To enhance the effects of lectures, one computer should be utilized by one participant at the training, and communication among the lecturers and participants should be promoted.

(5) Detailed contents of the training and the reference materials should be provided to participants in advance so that the participants understand the contents of the training, and can pick out problems they find in their daily work before they actually participate in the Training.

3-6 Lessons Learned

(1) In case of a project whose effectiveness is realized by establishing a computer network among various local regions, it is necessary to consider, at the planning stage of the Project, the status of regional economic development which affects the financial resources of the respective regional government to ensure sustainability after the completion of the Project.

(2) It is necessary to sufficiently understand the current regional and organizational condition of the participants and to settle a curriculum consistent with the level of the basic knowledge of the participants.

(3) It is necessary to secure a training period long enough for the participants to fully understand the contents of the training.

(4) In selecting the language of the software, it is necessary to consider the participants" tasks of utilizing, maintaining, and managing the software.

3-7 Follow-up Situation

Based on the recommendations above and lessons learned, the Project Phase 2 is implemented in the period of FY 2002 and 2003 to equally improve the applied techniques of each urban city for more effective and efficient operation of the computer network.