Terminal Evaluation

Asia

I. Outline of the Project

- Country : Republic of the Philippines
- Project title : Strengthening of Flood Forecasting and Warning Administration Project
- Issue/Sector : Disaster mitigation
- Cooperation scheme : Technical Cooperation Project
- Division in charge : JICA Philippine Office
- Total cost (estimated at completion of the Project) : 130mil. Yen
- Period of Cooperation :
  (M/M): April 5, 2004 – April 4, 2006
  (F/U):
- Partner Country's Implementing Organization :
  Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA),
  Department of Science and Technology (DOST)
- Supporting Organization in Japan : Ministry of Land, Infrastructure and Transport

1-1 Background of the Project

In Philippine, typhoons come close around 20 times in annual average, and 9 of them hit the Philippine islands and bring frequently localized torrential rainfall. Because of such weather condition and also increase of countrywide devastated mountainous area due to large-scale volcano eruption and deforestation, flood and debris flow disasters by heavy rainfall occur very frequently. In this situation, different governmental agencies have their own responsibilities on flood control and disaster mitigation, such as flood prevention and sabo works for main rivers in the country by the Department of Public Works and Highways, flood forecasting and warning administration by PAGASA, planning and implementation of disaster mitigation by local government units (LGUs).

The flood forecasting and warning system (FFWS) was introduced into Pampanga river basin for the first time in the Philippines as a pilot project under the grant aid of Japan in the year 1973. After that, the FFWSs were extended to Agno, Bicol and Cagayan river basins and also the flood forecasting and warning system for dam operations (FFWSDO) using Japanese loan.

More than 10 to 30 years have passed after installation of those FFWSs and the instruments and equipment for the systems were beyond their life span. In addition, due to the sediment originating from Mt. Pinatubo, the considerable change of the river channels of the Pampanga and the Agno rivers, and interference problems, FFWSs were not worked as originally planned. In 1999 the Overseas Economic Cooperation Fund (OECF), presently known as the Japan Bank for International Cooperation (JBIC) dispatched a study team to conduct the Special Assistance for Project Sustainability (SAPS) on the FFWSDO as well as the FFWSs. The important problems identified in the SAPS. To solve these problems, the PAGASA has implemented several measures with support from the JICA experts in the following: 1) strengthening of the flood forecasting and warning administration, 2) technology transfer of flood forecasting models, and 3) educational campaign on flood warning operation to local communities.

After that, the project on the strengthening the flood forecasting and warning system was recommended to be implemented for two (2) years from April 5, 2004 to April 4, 2006.

1-2 Project Overview

(1) Overall Goal

Reduce loss of lives and damage to properties due to floods in the monitored river basins.

(2) Project Purpose

PAGASA (FFB) capability to manage and operate the flood forecasting and warning system is improved.

(3) Outputs

1) Maintenance program for telemetry/multiplex equipment established and utilized.

2) FFB is equipped with FFW equipment and facilities.

3) Skills of FFB personnel in issuing adequate, accurate and timely bulletins is enhanced.

(4) Inputs

Japanese side:

Long-term Expert	2 persons
Short-term Expert	total 6 persons
Trainees received in Japan	5 persons
Provision of equipment (data collection system and computer) Local cost expenditure	13.05 million pesos

Costa Rican side:

Counterpart	total 17 persons (number at evaluation)
Local Cost	9.77 million pesos
Provision of land and facilities (office space etc.)	

II. Evaluation Team

Members of Evaluation Team:

1) Leader: Ms. Harumi KITABAYASHI, Deputy Resident Representative, JICA Philippines
2) Evaluation Planning: Mr. Kenichi KONYA, Assistant Resident Representative, JICA Philippines
3) Evaluation Analysis: Mr. Isao DOJUN, Chuo Kaihatsu Corporation

Period of Evaluation:

From January 16, 2006 to February 2, 2006

Type of Evaluation:

Terminal

III. Results of Evaluation

3-1 Achievement

The maintenance manuals for telemetry and multiplex equipment, which are utilized for transmitting monitoring data on rainfall and water levels in the monitored 4 river basins (Pampanga, Agno, Bicol and Cagayan) for the flood forecasting and warning system, were developed under this project and are utilized for regular maintenance activity. Database on equipment and spare parts were also developed and are updated regularly when regular maintenance activities are conducted. Development of the hydrometeorological on-line databases for 4 river basins will be completed by the end of this project. Furthermore, flood forecasting models and the user's manuals for 4 river basins were developed. Through OJT and workshops conducted by the short-term experts, knowledge and skills of the telecom engineers/technicians and the hydrologists of FFB were strengthened satisfactorily. In general, PAGASA (FFB) capability to manage and operate the flood forecasting and warning system is improved very much.

3-2 Summary of Evaluation Results

(1) Relevance

This project is in consistence with the policy, which is "mitigate the occurrence of natural disasters to prevent the loss of lives and properties" described in the Medium-Term Philippine Development Plan 2004-2010. Beside, one of the priority issues of ODA policy of Japan is "Environmental conservation and disaster management" and this project is consistence with this policy. There is conformity with needs of PAGASA and the approach and methodology were selected appropriately. Therefore, relevance of the project is high.

(2) Effectiveness

Through OJT and workshops conducted by the short-term experts, knowledge and skills of the telecom engineers/technicians and the hydrologists of FFB were strengthened satisfactorily. Accuracy and timeliness of the flood forecasting and warning is improved through development of the flood forecasting models and the user's manuals, development of maintenance manual for equipment and conduction of regular maintenance, etc., and because of those improvement on flood forecasting, people living flood hazardous areas can evacuate to safer places more timely. There is a case of that PAGASA had receive a certificate of appreciation (citation) conferred by a local government. Considering the fact that the most Outputs of the Project will be achieved by the end of the Project, it is therefore concluded that the effectiveness of the Project is high.

(3) Efficiency

Inputs of both sides were almost appropriate in terms of quantity, quality and timing. In regard to provision of equipment by Japanese side in second year of the project was delayed and this caused delay of a part of project activities. However, procurement and installation of equipment will be completed by the end of the project, and remaining activities will be conducted. There were 2 aspects that contributed to efficiency of the project. First one is the participation of staff of local government units (LGUs) to the Joint Coordinating Committee meeting of the project. This participation promoted better relationship between PAGASA and LGUs. Second one is the establishment of the Project Management Office (PMO) in the Flood Forecasting Brach of PAGASA. Good performance of PMO has been contributed for deepening recognition on the project and obtaining necessary budget for the project. Efficiency of the project is high in general.

(4) Impact

1) Prospect of achieving the Overall Goal

Impact on the Overall Goal is positive. As for recent major flood event, which recorded highest water flood level since 1982 (since the start of the FFWS) in Cagayan river basin in January 2006, there were no human lives lost. People were able to evacuate from the risk areas by following the flood warnings issued by PAGASA. Greater impact could be expected once other measures for more accurate forecast are implemented.

2) Other Impact

The Project has created renewed awareness in the staff of FFB on importance of flood forecasting and warning services. This awareness has made good impact on their working attitude to performing their duties and responsibilities. The public information drive conducted during the project implementation generated an increase in awareness on the flood warnings issued by PAGASA and enhanced the collaboration between the PAGASA and the local government units. This led to the establishment of the community-based flood forecasting and warning system established in the allied rivers of Agno and in the lower Pampanga river basin.

(5) Sustainability

1) Political aspect

In view of the recent spate of natural calamities, the need for increased public awareness and involvement in measures being put in place by the government for disaster preparedness, the Four Point Action Plan for Disaster Preparedness was issued by the National Disaster Coordinating Council (NDCC) in January 2005. The first in the Action Plan is "Upgrading of the forecasting capabilities of PAGASA and PHIVOLCS". Therefore, the importance of strengthening the capability of PAGASA with regards to forecasting and warning of hydrometeorological hazards will remain a high priority in the political agenda of the government.

2) Organizational aspect

The capability of PAGASA on operation and management of flood forecasting and warning system has been strengthened satisfactorily by the Project. In the course of the project implementation, PAGASA assigned additional staff to the field centers in Pampanga, Agno and Bicol. The number of staff assigned in those field centers seems appropriate. In case of Cagayan field center, the number of staff is not sufficient and should be increased. The Rationalization Plan which contains the proposed structural and functional modification of PAGASA seeks to strengthen the operation and improve the delivery of services. It is expected that the number of staff for the Cagayan center will be increased after approval of the Rationalization Plan. Therefore, it is expected that FFB will have more appropriate organizational framework for operation and management of the flood forecasting and warning activities.

3) Financial aspect

In line with the implementation of the NDCC Four Point Action Plan for Disaster Preparedness, the PAGASA will have more budgetary support from the National Government and financial assistance from other sources.

4) Technical aspect

Most of the personnel involved in the Project expressed that technical transfer has been conducted very effectively and the C/Ps

have improved their knowledge and skills related the flood forecasting and warning system. The trained personnel were satisfied with the knowledge and the skills acquired.

It was observed that there are few young hydrologists and telecom engineers/technicians. Thus, there is an apprehension on the sustainability of trained personnel in the future. Due to the attrition policy of the government, PAGASA was able to hire limited number of young personnel for the past 10 years. It is expected that PAGASA continues to employ new young staff and conduct necessary capacity development.

The proper maintenance of equipment and facilities is a very important component for accurate and timely flood forecasting and warning. The telecom engineers of FFB are technically capable of maintaining outmoded and deteriorated equipment for the flood forecasting and warning system. But in due time, these equipment will need to be replaced.

3-3 Conclusion

Based on a series of discussions with Philippines officials and counterparts as well as results of discussion by the Joint Evaluation Team, the Team evaluates that the project performance is very satisfactory. Therefore, it is concluded that the Project will be terminated on April 4, 2006 as scheduled.

3-4 Recommendations

The following are the recommendations as a follow up action by PAGASA:

(1) Monitoring and evaluation of the Community-based Flood Forecasting and Warning System (CBFFWS) in the Allied Rivers of Agno Due to the delay of procurement of some equipment, such as water level gauges and potable radios for communication etc., installation of the equipment will be completed by the end of February 2006. After then, it is planned to conduct trainings for the water level observers. This community-based system will be tested during the flood season of 2006 therefore, it is recommended that PAGASA should monitor whether the activities for flood and warning system are carried out smoothly as scheduled and assess the results of implementation of the activities after the flood season. The results of the monitoring and assessment of the activities can be utilized for further improvement of the system in the Allied rivers for the succeeding flood seasons. It is also necessary to make a plan for the monitoring and assessment of the system before the commencement of the flood season in 2006. The monitoring and assessment of the CBFFWS can serve as a model for other areas.

(2) Forging stronger linkage between PAGASA and concerned agencies and LGUs
To ensure the sustainability of coordination of flood forecasting and warning activities, it is important to grasp the degree of participation of communities such as people’s understanding/ recognition/cooperation of the activities, cooperation of LGUs, and also continuity of financial support of LGUs.

(3) Capacity development of younger staff in FFB (Flood Forecasting Branch)
The capability improvement of FFB staff was carried out under the project. However, there is the situation that an average age of the staff rises. To sustain the high capability of FFB, recruitment and capacity building of younger staff is important. Therefore, capacity development such as in house training and seminars should be carried out continuously.

3-5 Lessons Learned

Utilization of the Project Design Matrix (PDM) as a tool for project management

In spite of the generation of good outcomes produced by the Project, it was difficult to verify that by the indicators described in the PDM, for the relevant data and information were absent.

An insufficiency in the explanation and understanding on the use of the PDM as monitoring tool was also observed. Therefore, it is necessary to get enough understanding by personnel directly involved in the Project on how to utilize the PDM effectively from the planning to the monitoring and evaluation stages of a project. Regular collection of basic information and the institutionalization on the use of PDM is encouraged.