

# **SHIFTING PARADIGM OF JAPANESE ASSISTANCE IN DISASTER RISK MANAGEMENT IN THE PHILIPPINES**

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## **ABSTRACT**

The Philippines is one of the most disaster-prone countries in Southeast Asia. This paper reviews Japanese development assistance to the Philippines in disaster risk management, which has continued around 40 years. Most financing projects have supported structure measures, protecting some eight million people in 4,000 km<sup>2</sup>. Under technical cooperation Japanese engineers have transferred their technology to over 600 Filipino engineers. The assistance, however, has not necessarily attained human security, which focuses on empowerment and protection of individuals, and a mission of Japan International Cooperation Agency. Crucial issues were found in the assistance projects: (1) delayed construction projects; (2) limited contribution to poverty reduction; (3) limited support to communities; (4) limited involvement of local governments and communities; and (5) limited coordination with other related sectors. The paper further proposes approaches in future projects.

## **INTRODUCTION**

The Philippines is the one of the most vulnerable countries to natural disasters, including floods, landslides, tsunami, drought, earthquakes, and volcanic eruptions. Among the various types of disaster, storms are overwhelmingly dominant, about 70%, in number of casualties. On average, most of the 20 typhoons that form in the Pacific every year move towards the Philippines, and about ten of them strike the country. The average death toll is 630 persons per year. The damage is around US\$ 160 million per year, which is equivalent to around 2 percent of the country's national budget. Public investment in countermeasures against floods has been inadequate, and almost 90 percent of the budget for flood control structures is currently provided by foreign assistance, mainly Japanese assistance.

Japan has provided official development assistance in disaster risk management, and contributed to substantially reducing disaster damages. This study reviews achievements and issues of Japanese assistance to the Philippines, and recommends new assistance approaches based on practices and lessons learned from past assistance.

## **OVERVIEW OF JAPANESE ASSISTANCE TO THE PHILIPPINES**

### **Flood disaster risk management**

JICA has supported the Philippines their efforts to manage flood risks by providing financial assistance, technical assistance, and emergency relief for some 40 years since

the early 1970s (fig. 1).<sup>a</sup> The assistance includes formulating the master plans and feasibility studies of flood management, transferring Japanese technology to Philippine engineers, and providing Yen loan and grant aids for constructing flood control structures and for providing flood forecasting and warning equipment. Some 4,000 km<sup>2</sup> and around 8 million people including 1 million poor have been protected from floods by assistance-provided structures. Over 600 engineers and specialists in the government have been trained under JICA projects (JICA 2008b). In total, 138,173 million yen, around US\$ 1.5 billion has been provided for 53 projects from 1991 to 2003.

Flood control projects in Ormoc City, Leyte Island represent the best practices of JICA projects. Typhoon Uring caused debris flows and floods resulting in around 8,000 deaths in 1991. This disaster is called the Ormoc Tragedy because of the enormous damages. River channels had limited capacities to flow floods because of the encroachment of buildings, roads, and bridges. Urban areas were overpopulated, and the urban poor occupied river banks and low-lying areas. In a US\$ 30 million JICA project, check dams and bridges were constructed, and river channels were improved. Same scale of heavy rains of 50-year return periods happened in 2003, but no damage occurred to cities properly protected by structures. Since safety levels against floods were improved, commercial facilities and parks were developed along rivers. The Ormoc City Government is properly operating and maintaining the structures. The government established a flood mitigation committee

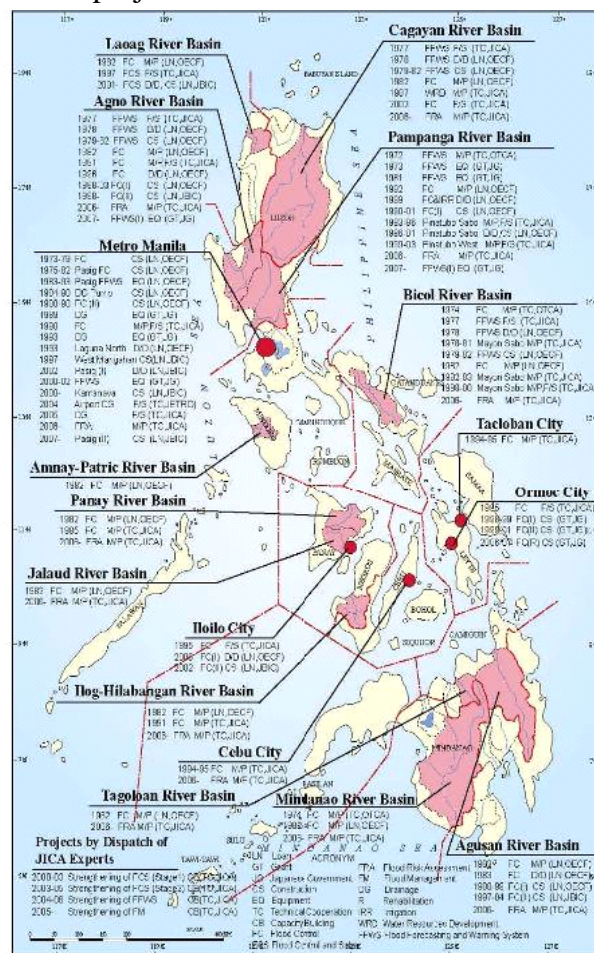


Fig. 1 Past JICA projects



Fig. 2 Project in Ormoc City  
Improved river (Left), Check dam (middle), Flood fighting drill (right)

<sup>a</sup> JICA is the world's largest bilateral development assistance agency with a budget size of some \$10 billion providing technical assistance, concessionary Official Development Assistance loans, and grant aid to developing countries.

consisting of concerned organizations to coordinate their roles, and is allocating enough budgets. This is regarded as an exceptional case in the Philippines, where operation and maintenance are serious issues.

### **Earthquake and volcano eruption risk management**

JICA assisted in establishing monitoring systems for earthquakes and volcano eruptions through providing equipment and trainings for Filipino specialists. The government issues information on earthquakes around 10-15 minutes after the earthquakes, which used to take around 3 hours before Japanese assistance. Also, the evacuation of residents from volcano eruptions could be shortened from three months to one month because of increasing accuracy of predicting eruptions. The government is properly operating and maintaining the equipment.

### **APPROACH PROPOSED BY REFLECTING LESSONS LEARNED**

While JICA projects have contributed to improving disaster risk management, crucial issues of an engineering-oriented approach are argued. The review studies of past JICA assistance point out the following issues (OECF 2004, JICA 2004a, and 2004b).

- (1) Institutional capacity
  - a. improper river and water management administration systems
  - b. insufficient accumulation of technology know-how, and information for staff in concerned organizations
  - c. insufficient number of staff and capacity of implementing agencies
  - d. limited coordination with other organizations and stakeholders
- (2) Project implementation
  - a. delays in project implementation
  - b. difficulties in resettlement of people affected by projects
  - c. opposition by communities and civil societies
  - d. insufficient operation and maintenance

Bankoff (2003) stresses that problems arise with purely technological solutions to the question of flooding in Metro Manila. The cleaning and rehabilitation of existing flood-control structures and facilities are both costly and difficult. In many cases, drainage or maintenance work is suspended because of informal dwellings or the urban poor. Bankoff assumes that the problem of flooding in Metro Manila necessitates purely technological solutions is often itself a factor in making some sectors of the population more vulnerable to hazard.

New approaches are proposed through examining lessons learned from the past projects.

### **Lessons learned from past projects**

The author interviewed government staff, other donor agency staff, and people affected by floods and debris flows; conducted field surveys; and organized workshops to obtain feedback from key stakeholders on findings. Lessons learned from past projects are examined herein.

#### **Comprehensive assistance and delayed project implementation**

JICA projects cover a wide range of areas such as flood control, sediment disaster management, flood forecasting and warning, volcano eruption, and earthquakes. Considering the limited resources, selecting priority areas through examining

achievements by past projects is required.

JICA has mainly supported structural measures such as constructing river banks and installing equipment for flood forecasting and warning. Long liner dikes along rivers between mouths of rivers and mountains have been constructed to control floods and to protect flood plains. It takes a few decades to complete the projects and to realize project benefits in major river basins.

The implementation of most construction projects is delayed. The delay results in increased costs and decreased benefits of overall project objectives. The main reasons are limited capacity of implementing agencies in project management, inadequate arrangement of land acquisition, and resettlement. Prolonged acquisition of lands and resettlement of squatters, or the urban poor, caused some years delay and incompleteness of some works in most projects. The resettlements of squatters, who do not have legal land ownership, require the complicated process of identification of affected families, compensation, development of resettlement areas, livelihood rehabilitation, and others. Legal land ownership is often unclear, and land titles are not properly registered.

Japan Bank for International Cooperation, now part of JICA, conducted an evaluation study on flood control projects in the Pampanga River in 2004. These findings are regarded as typical cases of JICA projects. Project periods became twice the envisaged period because of lack of local funds, opposition of local communities and civil societies, and prolonged land acquisition. The study stresses that project could have smoothly implemented and agreements have been reached with local residents, if land acquisition had been properly prepared and coordinated.

In line with the assistance projects on structural measures, technical assistance has covered mainly transferring Japanese technology related to planning and constructing structures, and maintaining equipment to Philippine government engineers. Assistance on strengthening institutional capacities and legal systems has been limited.

#### **Limited contribution to poverty reduction**

The projects rarely benefit the urban poor directly. The urban poor were regarded as the obstacles of construction works, not project beneficiaries. They migrated from rural areas to low-lying areas and rivers in urban areas to secure their livelihoods, and are one of the most vulnerable groups to floods.

#### **Limited support to communities**

Assistance on non-structural measures such as evacuation systems has been limited. While equipment necessary for hydro-meteorology monitoring and analysis was provided, evacuation systems at a community level have remained unsupported. Information issued on flood forecasting and warning is vague, and is of little use for disaster management activities by communities and local governments.

#### **Limited involvement of local government and community in projects**

Some projects started without agreements with local governments, so the local governments did not support these projects. The local governments, which are responsible for resettlement of people affected by the projects, conduct people's resettlement and develop resettlement sites. Some projects faced opposition from local communities because of failure of building consensus of the projects. The flood control projects mainly benefit local communities by mitigating flood damages. Considering this characteristic of projects, project purposes become questionable when the local communities oppose them.

Local governments operate and maintain structures in medium-size rivers improved

by central government agencies. While these agencies have the capacities of operation and maintenance to some extent, the local governments have quite limited institutional capacities. JICA has provided technical assistance mainly to central government agencies. Communities are not involved in the projects, though they are expected to share some roles such as minor repair works or operation of small facilities.

#### **Limited coordination with other related sectors**

Solid waste dumping in drains and deforestation exacerbate flood disasters. Currently, measures have been taken only inside river areas. Integrated measures at a river basin level are limited.

#### **New approach**

JICA announced an all-new vision in October 2008: “inclusive and dynamic development”, and defined “achieving human security” as a mission. Human security focuses on individuals and building societies in which everyone can live with dignity by protecting and empowering individuals and communities that are exposed to actual or potential threats (Government of Japan, 2005). This concept has become JICA’s new challenge in disaster risk management, since JICA’s assistance in the Philippines has not necessarily matched this human security concept. It is necessary that the projects contribute to breaking the vicious cycle of poverty and disaster. Various facilities, which JICA has assisted for some 40 years in the Philippines, are utilized to mitigate disaster damages. Also, lessons learned and best practices in other countries and Japan have been adopted. To resolve the issues learned from the past experiences, the following new approaches are proposed.

(1) **Concentration in core competence:** Priority is put on managing flood disasters that frequently and severely affect the country’s socio-economic development. Monitoring earthquakes and volcano eruptions has improved to a certain level. Considering inefficiency of liner river bank systems, areas protected by structural measures are limited to strategic areas such as metropolitan areas and highly density populated areas. To adapt to climate change, coastal low-lying areas are also targeted. These areas are regarded as the most vulnerable to disasters affected by sea level rise and flood volume increase (Ishiwatari 2009). Since urban areas are generally situated in low-lying areas, climate change and urbanization exert a negative synergy effect on deteriorating flood damages (Ishiwatari in press). Assistance aims at mainly managing flood disaster risks. A comprehensive approach is introduced covering the following four layers:

- (a) Support to improving policy and institution
- (b) Strengthening of the community’s capabilities in disaster risk management
- (c) Developing capacities in disaster risk management, and operation and maintenance; and
- (d) Promoting structural measures.

(2) **Mainstreaming poverty alleviation in projects:** The urban poor, who live in low-lying areas and the group most vulnerable to floods, will be targeted from human security perspectives. There are good practices that flood management projects have improved the quality of life of the urban poor. “Atomic bomb slum” formulated just after the Second World War in Hiroshima was improved by integrated projects of flood control and housing administered by the Japanese Government. Also, JICA supported the urban poor in Colombo, Sri Lanka under flood control projects.

(3) **Capacity development focusing on community-based disaster risk management:** Community-based disaster risk management will be promoted according

to the JICA approach in disaster management (JICA 2008a). Communities play a crucial role in flood disaster risk management (Ishiwatari 1997). Information on flood warning and forecasting should be improved as communities and local governments can utilize such information in their disaster management efforts.

(4) **Involvement of community and local government in all project cycle:** It is crucial to obtain the consensus among a wide range of stakeholders from the beginning of the projects. Involvement of local governments and communities in construction projects is crucial in smooth implementation and proper operation and maintenance of structures constructed. Governance mechanisms in a river basin level involving these stakeholders will be established.

(5) **Collaboration with other sectors:** Integrated management covering the whole river basin is required. Management of urban development and forestry is needed to manage flood risks. Coordination with other sectors, such as urban, environment, solid waste management, sediment management, and forest sectors, will be strengthened.

## CONCLUSION

While JICA supported the Philippines to substantially reduce flood disasters, the paper shows various lessons learned from the past projects. A new approach, which represents a paradigm shift from an engineering-oriented approach to an integrated approach, was proposed to resolve these issues.

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