



Pinatubo Hazard Urgent Mitigation Project

Providing relief to the victims and supporting the rehabilitation of the disaster areas toward creating a safe environment

[External evaluator]

Yasuhiro Kawabata and Yuriko Sakairi, Sanshu Engineering Consultant Co., Ltd.

Rating		
Effectiveness, Impact	a	Overall rating B
Relevance	a	
Efficiency	b	
Sustainability	b	

Project Objectives

To (i) secure the arterial highway transportation network, and to prevent the geographical spread of the sedimentation of volcanic flows by reconstructing roads and constructing / reinforcing sabo and flood control facilities, as well as (ii) to prevent further disaster through river improvement, in the disaster areas, where volcanic mudflows have subsided, in Tarlac and Papanga Province located around the Sacobia-Bamban River middle-basin originating from Mt. Pinatubo, thereby contributing to economic growth in the affected area

Outline of the Loan Agreement

- Loan amount / disbursed amount: 6,911 million yen / 6,910 million yen
 - Loan agreement: March 1996
 - Terms and conditions: Main part: interest rate of 2.5% (or 2.1% for consulting services); 30-year repayment period (including a 10-year grace period); general untied
 - Final disbursement date: July 2001
 - Executing agency: Department of Public Works and Highways (DPWH)
 - Website URL: <http://www.dpwh.gov.ph>
- * This ex-post evaluation has been conducted jointly with the National Economic and Development Authority (NEDA) of the Philippine government.



Maskup Dam

Effects of Project Implementation (Effectiveness, Impact)

The completion of the Maskup Dam has made it possible to control the 7,000 m³ of volcanic mudflow sediments as planned. In fact, the affected land area of 11,753 ha has already been recovered. Some 8,700 residents in sand pocket areas, who had been evacuated from the volcanic mudflows, have returned to their land and are now engaged in farming as before the disaster. The convenience of the disrupted highway network has increased with the rehabilitation and the subsequent reopening of National Highway No. 3. The average daily traffic on this highway at the Mabalacat gate near the disaster area increased from the estimated 6,000 vehicles in 1995 to 8,500 vehicles in 1999 and further to 9,900 vehicles in 2004. In addition to better access, industrial establishments have been lured to the area, significantly contributing to the revitalization of the regional economy. More opportunities for farming and increased income were reported as the effects of this project in a beneficiary survey.

Therefore, this project has largely achieved its objectives and its effectiveness is high.

Relevance

This project has been highly relevant with the Philippines' national policies and development needs at the times of both appraisal and ex-post evaluation. In a situation where volcanic mudflows triggered by torrential rain had continually displaced residents since the 1991 eruption of Mt. Pinatubo, it was necessary to as soon as possible prevent the geographical spread of volcanic mudflows, reduce the damage, and secure a road network in the disaster area. In addition, economic development and natural disaster mitigation remained high on the agenda for the Medium-Term Philippines Development Plan that was in place at the time of the ex-post evaluation.

Efficiency

It took longer (137% of the planned period) and cost largely as planned (107% of the planned cost); therefore, evaluation for the efficiency is moderate. The implementation delay and additional costs were the result of additional construction work needed to recover from natural disasters, including a series of typhoons. The delay was kept to the relatively minimum level by introducing the CLG (Cemented Lahar and Gravel) method and increasing the civil engineering workforce.

Sustainability

No major problems have been observed in the capacity of the executing agency nor its operation and maintenance (O&M) system at the time of the ex-post evaluation. However, the fact that the body of the Maskup Dam is always covered with volcanic mudflow sediments is a source of concern. Although their removal is necessary to forestall volcanic mudflow hazards triggered by torrential rain or other causes, adequate measures have not been taken toward that goal, including studies, project planning, and O&M budget allocations. Therefore, sustainability of this project is fair.

Conclusion, Lessons Learned, Recommendations

In light of the above, this project is evaluated to be satisfactory. To ensure that the sabo dam remains effective and safe, regular sediment dredging is essential, which requires careful planning based on accurate surveying and the necessary budgetary allocations. It is advisable to secure such allocations as soon as possible.