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Indonesia

14 Mt. Merapi and Mt. Semeru Volcanic Disaster Countermeasures Project (2)

The project's objective was to prevent or mitigate damage caused by debris flows by constructing erosion control facilities (sabo facilities) on Mt. Merapi and Mt. Semeru in central and eastern Java, and thereby contribute to social stability and economic growth in the region.

Loan Amount/Disbursed Amount: 4,405 million yen/4,387 million yen
Loan Agreement: December 1995
Terms and Conditions: Interest rate, 2.3%; Repayment period, 30 years (Grace Period, 10 years); General untied
Final Disbursement Date: December 2001
External Evaluator: Takuya Okada (KRI International Corp.)
Field Survey: July 2003

Evaluation Result

Sabo facilities were constructed in the vicinity of Mt. Merapi (summit elevation: 2,986m) and Mt. Semeru (3,676m) essentially in line with project plans, and the implementation period and costs were also basically as planned. The sediment control rates of sabo facilities constructed on Mt. Merapi is 71.6% and has reached the target level (70.6%), while for Mt. Semeru the figure is 51.6%, which is approaching the target level (58.7%). In consequence, although debris flows have occurred every year on both volcanoes, there have been no fatalities or damage to property or agricultural land since 1994, and the sabo facilities developed through this project have helped to protect against disaster. In the beneficiary survey, approximately 70% of respondents cited "increased opportunities to secure employment and income through gravel collection and sales" and "more farmland in areas near sabo facilities that have been equipped with an irrigation function", confirming the economic impacts of this project. Approximately 2 million people on Mt. Merapi and 850 thousand people on Mt. Semeru have benefited from the project, which is more than the population of Kyoto (2.65 million). There are no problems in the technical capacity, operation and maintenance system, or financial condition of both the Mt. Merapi disaster prevention office and the Mt. Semeru disaster prevention office, the executing agencies. One of the lessons learned from this project is that policy-based incentives to commercial sand mining operatives have the potential to alleviate the fiscal burden of operating and managing the project and it is hoped that this finding will be utilized on similar projects.

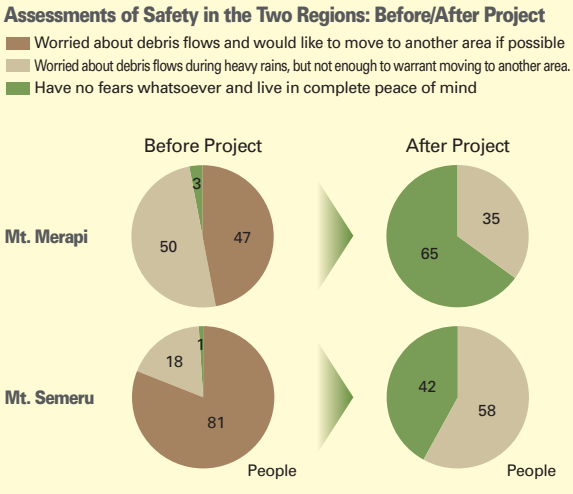
Third-Party Evaluator's Opinion

It is especially important to expose the figures of economic impact. It can be in the form of small permanent exhibitions or information posters in village/sub-district centers. This will ensure the ownership of the local communities and maintain their appreciation of the past & present positive impacts of the project. O & M responsibilities were still designed for being undertaken by the central government, but sooner or later this need to be reviewed and decentralized to the local levels.

Third-Party Evaluator: Ms. Erna Witoelar

Obtained a master's degree in human ecology from University of Indonesia. Formerly served as Minister of Human Settlements and Regional Development. Presently holds the post of UN Ambassador for the Millennium Development Goals, and the post of Chairperson of Indonesia Biodiversity Foundation (KEHATI). Specializes in environmentology.

Assessments of Safety in the Two Regions: Before/After Project



Sabo facilities developed via the project (check dam on the Apu River)

The debris flow that occurred in the Apu River in January 2003 completely filled the check dam. Had there been no check dam, the village located down river (Muntilan) could have sustained considerable damage. The debris flows that occurred on Mt. Merapi in 1992 and 1994 (10 million cubic meters) were approximately 2.5 times larger than that on Unzen-Fugendake volcano (Nagasaki, Japan) in 1993.