

<p>What are major factors that facilitated or hampered the sustainability, or could facilitate or hamper in future?</p>	<p>• Opinions of persons concerned</p>	<p>• Executive staff of General Directorate of Water Resources of the Ministry of Public Works and STC, C/Ps, Japanese experts</p>	<p>1) Factors facilitated:</p> <ul style="list-style-type: none"> • STC has qualified human resources and good facilities. • Good cooperation and networking among related institutions such as local governments. <p>2) Factors hampered:</p> <ul style="list-style-type: none"> • Organizational status of STC is not permanent one yet • There are C/Ps who have more than 50 years old and age of retirement is very near future.
<p>Overall Evaluation of the Sustainability</p>	<p>(1) Political aspect The president of Indonesia expressed a policy on National Movement of Partnership for Saving Water in April 2005, which has aim to conserve water resources. Several integrated programs have been started and Sabo technology is a important tools for control erosion and sediment-related disaster. Importance of disaster management in the national policies will remain in the viewpoints related with water resources conservation.</p> <p>(2) Organizational aspect It is necessary to add roles for STC in order to be able to have functions such as support activities to local governments in regard to Sabo technology (prevention of sediment-related disaster) and implement countermeasures after occurrence of disaster. At present, discussion about status of STC for becoming permanent organization is underway in the Ministry of Public Works. Therefore, it is expected that STC will have appropriate organizational and institutional status for continuing the activities of the Project after the termination of JICA's cooperation.</p> <p>(3) Financial aspect Indonesian government made efforts to increase budget to STC in recent years and organizational status of STC is expected to become a permanent one in the Directorate General of Water Resources. Therefore, it is expected that STC can secure budget necessary for activities on disaster management in the country.</p> <p>(4) Technical aspect Generally, C/Ps have good capacity and experience on Sabo technology. As of technologies transferred under the Project, methodology of ISDM is still under development. Also non-structure measures for disaster prevention (soft aspect) is a part of important aspect and new aspect for them. Therefore, C/Ps have good capacity to conduct technical transfer to other staff of STC and staff of other related organizations, but still more strengthening of their capacity is desired.</p> <p>There is an anxiety about age of C/Ps. There are several C/Ps who have more than 50 years old, and age of retirement is very near future (age of retirement of the government official is 56). Therefore technology transfer from those C/Ps to younger staff and also capacity development of younger generation will be necessary.</p>		

Table of achievement (Achievement of the Overall Goal, Project Purpose and Outputs at the time of evaluation)

The Integrated Sediment-Related Disaster Management Project for Volcanic Areas in the Republic of Indonesia

Achievement	Items		Required information/ data (Indicator)	Information source	Findings
	Main items	Sub items			
Achievement (Integrated sediment-related disaster mitigation measures are implemented in hazardous areas)	Achievement of the Overall Goal (Engineers involved in disaster mitigation and local residents become able to plan and implement disaster mitigation measures to reduce the impacts of sediment-related disasters on villages in volcanic areas)	Achievement of the Project Purpose (Engineers involved in disaster mitigation and local residents become able to plan and implement disaster mitigation measures to reduce the impacts of sediment-related disasters on villages in volcanic areas)	1) No of the projects implemented according to the model established in the model area	Report from Ministry of Public Works	None yet. However, the ISDM (Integrated Sediment-related Disaster Management) concept is going to be introduced in the JBIC (Japan Bank for International Cooperation) financed projects for Merapi and Bawakaraeng areas. And also the ISDM concept is introduced in the Bahorok project that is financed by the central government of Indonesia. (The ISDM concept means to secure the safety of communities by best synthesizing non-structural and structural measures according to the local conditions. The non-structural measures are methods such a warning and evacuation systems and land use control regulations, while the structural measures are construction of facilities such as Sabo dams and san pockets. The concept has been introduced because the financial and time constraints make a full set of structural measures extremely difficult in hazardous areas. The ISDM should be implemented in consideration of low-cost practical measures and contribution to improvement of rural living standard.)
			2) Variety of disaster mitigation measures participated by trainees/C/Ps	Report from Ministry of Public Works	3 projects: As mentioned above, the ISDM concept is introduced in the JBIC financed projects for Merapi and Bawakaraeng areas, and in the Bahorok project financed by the central government, and ex-trainees and C/Ps will take part in those projects. Several disaster mitigation projects have been planned, designed and implemented by ex-trainees of the CJT course in Bali, Merapi, West Sumatra and Palu areas.
			3) No./status of disaster prevention committees and voluntary evacuation drills by the villagers and opinions of residents	The results of social survey, questionnaire, site inspection	Awareness raising seminars on sediment-related disaster mitigation have been planned and implemented in Kebumen and Banyumas regencies by ex-trainees of the WIDE course. 2 cases: Disaster prevention committees in Merapi and Bawakaraeng are organized.
			1) Technical guidelines for integrated sediment-related disaster mitigation measures are established and disseminated	Report from Ministry of Public Works	Following 4 kinds of technical guidelines are under preparation and first draft of the guidelines will be developed by the end of the Project (March 2006). 1) First draft of the Overall implementation Plan of ISDM for Mt. Merapi Model Area, 2) First draft of guideline on warning and evacuation system (manual on warning and evacuation criteria), 3) First draft of the guideline on warning and evacuation system (manual on hazard warning system), 4) First draft of the guideline on warning and evacuation system (making hazard map of sediment-related disaster).

Items		Required information/ data (Indicator)	Information source	Findings								
Main items	Sub items											
Are Outputs producing as planned?	1. Planning and implementation methodologies of sediment-related disaster mitigation measures are established through the cooperation between engineers on disaster mitigation and local residents (Establish integrated sediment-related disaster management model)	2) No. of the trainees assigned to the disaster management project or related section	Report from Ministry of Public Works	<p>Numbers of participants by course are as follows.</p> <table border="1"> <thead> <tr> <th>Course</th> <th>Number of participants</th> </tr> </thead> <tbody> <tr> <td>OJT course</td> <td>25</td> </tr> <tr> <td>WIDE course</td> <td>104</td> </tr> <tr> <td>MPBA course</td> <td>82</td> </tr> </tbody> </table> <p>In case of ex-trainees of the WIDE course and the MPBA course, more than 60% of them are utilizing the matters learned at the training courses for their works very frequently or frequently, and about 27% of them are utilizing occasionally according to the results of questionnaire survey. In case of trainees of the OJT course, around 70% of them are utilizing the matters learned very frequently or frequently, and about 30% of them are utilizing occasionally.</p> <p>Because the Project is under implementation, survey on peoples' awareness is not yet done. A survey on peoples' awareness on disaster mitigation in the Merapi model area (there are two villages with around 3,000 population) is planned to be conducted by the end of the project period.</p>	Course	Number of participants	OJT course	25	WIDE course	104	MPBA course	82
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		OJT course	25									
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3) Status of peoples' awareness on disaster mitigation in model areas	The results of social survey, questionnaire, site inspection	<ul style="list-style-type: none"> The draft hazard maps will be developed for the model areas of Bali, Merapi and Bawakaraeng, and a draft hazardous points maps for Kebumen, Palu and West Sumatra areas will be developed by the end of the Project. The first draft of "the manual for investigating dangerous stream of debris flow", and the first draft of "the manual for investigating slope failure related disaster" is developed will be developed by the end of the Project. 										
1) Status of utilizing hazardous points maps and hazard maps	Project report, site inspection, questionnaires etc.	<ul style="list-style-type: none"> 1 case: A draft of disaster prevention and evacuation criteria will be developed for the Merapi model area by the end of the Project. 										
2) Status of utilizing disaster prevention and evacuation criteria	Project report, site inspection, questionnaires etc.	<ul style="list-style-type: none"> A comparison of existing sediment-related disaster mitigation works and integrated disaster mitigation model works in view of cost-effectiveness and cost-benefit in the Merapi model area is underway. Applicability investigation of the soil cement method and a construction cost comparison of this method for Sabo dam will be completed by the end of the Project. In case of the cost comparison of the training dyke (structure for river bank protection), it is difficult to accomplish it. 										
3) Comparison of existing sediment-related disaster mitigation works and integrated disaster mitigation model works in view of cost-effectiveness and cost-benefit	Project report	None										
4) States of damage and robberies of facilities and materials of sediment-related disaster mitigation works	The results of site inspection	None										
5) No. of protected people and No. of plans and implemented works of Sabo facilities equipped with additional functions	Project report	1 site in West Sumatra: 25 houses, water supply and irrigation facility, and 3 bridges. (A disaster was occurred in West Sumatra before the commencement of the Project, and later local government implemented the countermeasures on this disaster. The OJT trainees of the Project were engaged in this countermeasures implementation.)										