

Landslide Disaster Management Project

- Reducing landslide disaster damage in Armenia through the formulation of a comprehensive landslide disaster management plan and implementation of measures on the basis of results of investigation/assessment of landslide disaster risks -



1. Background of the Project and Issues

In the Republic of Armenia (hereinafter RA), landslide disaster is one of major natural disasters and 15% of population (about 470,000 people) live in the areas of the disaster risks. As a result of JICA study on Landslide Disaster Management (2004-2006; hereinafter the JICA Study), 2,504 landslides were registered on an inventory form (Figure 1). The JICA Study reported that landslide areas occupied 8% of the national territory, and recorded damage reached to be 2.13 bil. AMD. Based on the result of the JICA Study, Ministry of Urban Development formulated “Landslide Disaster Management Concept” (hereinafter Previous Concept) in 2007 and it was approved by the Government. The plan of countermeasures, attached to Previous Concept was not implemented due to lack of national budget.

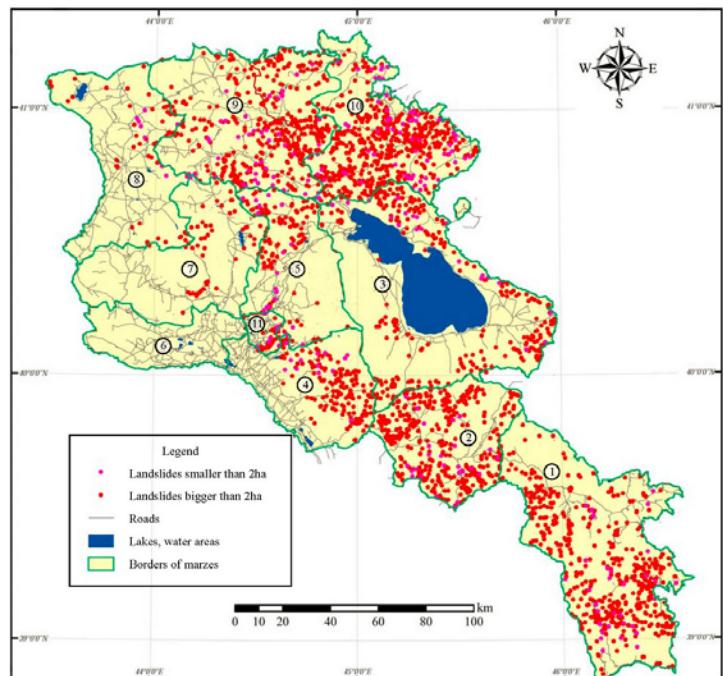


Figure 1 Landslide Distribution Map of Armenia*

Issues	Concepts	Concepts	Concepts
Issue related to skill	Issue related to legal framework	Issue related to implementation of measures	
Necessity of improvement of the of response to landslide disaster and skills of implementation of measures	The disconformity of landslide countermeasures with the legal framework and organizational structure	Landslide countermeasure inclined to emergency response	
Implementation concept 1	Implementation concept 2	Implementation concept 3	
Provision of sustainable development related to landslide countermeasure	Establishment of a system of landslide countermeasure	Development of a comprehensive plan and reduction of landslide disaster risk based on the implementation of measures	

In these circumstances, a landslide disaster occurred in the northern area of RA in 2011. Thirty five (35) vehicles were caught in the landslide, killing five (5) persons, and main road to Georgia was closed for a long duration. Importance of the implementation of landslide disaster measures was re-recognized, and accordingly, Ministry of Emergency Situations, RS (MES of RA) was assigned to be the responsible agency, instead of Ministry of Urban Development, by the order of the Prime Minister. A new “Landslide Disaster Management Concept” (hereinafter New Concept), stipulating function of related agencies, was prepared and approved in July 2013 by the Government.

In order to realize landslide disaster management based on New Concept and WG, it is necessary for RA to renew a current comprehensive landslide disaster management system as follows.

- Framework (institution): to formulate regulations such as guidelines and manuals to implement measures.
- Framework (Organization): to establish a new organizational framework, centering Ministry of Emergency Situations as the responsible ministry
- Framework (Budget): to prepare an implementation plan of measures based on reliable cost-benefit comparison and secure budget for the implementation, including budget

for proactive measures.

- Knowledge, technique, and information: to accumulate knowledge, technique, and information in WG for clarifying risks and implement measures in a sustainable way.
- Residents participation and assistance for the participation: to share knowledge, technique, and information with residents for their autonomous activities.
- Planning and promotion of measures: to make plans and implement measures efficiently, after checking cost-benefit balance about hard measures and combining the hard measures with soft measures such as land-use control, relocation of houses in dangerous areas, monitoring and evacuation.
- Formulation and approval of overall plan: to formulate comprehensive landslide disaster management plan for official approval.

2. Approach to solution

The goal, purpose, and expected outputs of the project are shown in the blue box below, and for the achievement of the outputs, technical cooperation and assistance are provided in this work.

【Overall goal】	Reducing landslide disaster damage in Armenia through the formulation of a comprehensive landslide disaster management plan and implementation of measures on the basis of results of investigation/ assessment of landslide disaster risks
【Project purpose】	Improving landslide disaster management capacity of WG
【Counterpart agency】	Ministry of Emergency Situations, RA
【Expected outputs】	
【Output 1】	The members of WG acquire technology and know-how on investigation, assessment, and design/ order/ supervision of measures
【Output 2】	A comprehensive landslide disaster management plan in Armenia is formulated, guidelines for landslide disaster management (investigation, assessment, and design/ order/ supervision of measures) are prepared, and laws and regulations for implementation of the measures are improved
【Output 3】	Organizational and institutional framework for implementation of monitoring, proactive measures, emergency measures, and permanent measures is improved in related ministries and agencies, in accordance with the concept for landslide disaster management

Counterpart agency of the project is Ministry of Emergency Situations RA and WG consists of members from related ministries and agencies.

As a conclusion of the project, landslide disaster management in RA shall be updated through comprehensive efforts by each ministry and organization.

(1) General Approach:

For the realization of the New Concept assistance will be provided in all the stages of landslide disaster management in accordance with Figure 2.

(2) Approach 1 : Provision of sustainable development related to landslide countermeasure

The following four points are important for ensuring sustainable development to landslide countermeasure.

- Accumulation and sharing of knowledge, technology and information: to establish info-communication ways not only for government people but also for residents
- Confirmation of the efficiency of risk reduction based on the observation of cost-benefit ratio: to

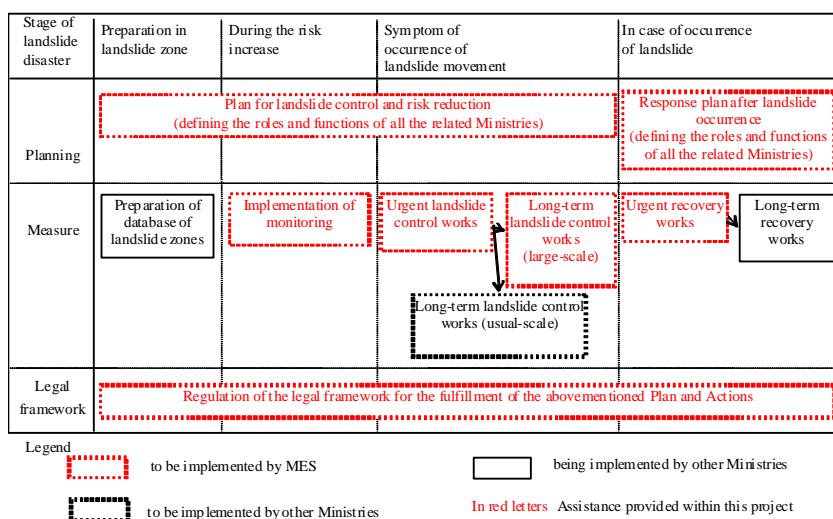


Figure 2 Mechanism of response to landslides and the assistance provided within this work (the base for preparation is the report on the detailed study after coming back to the country)

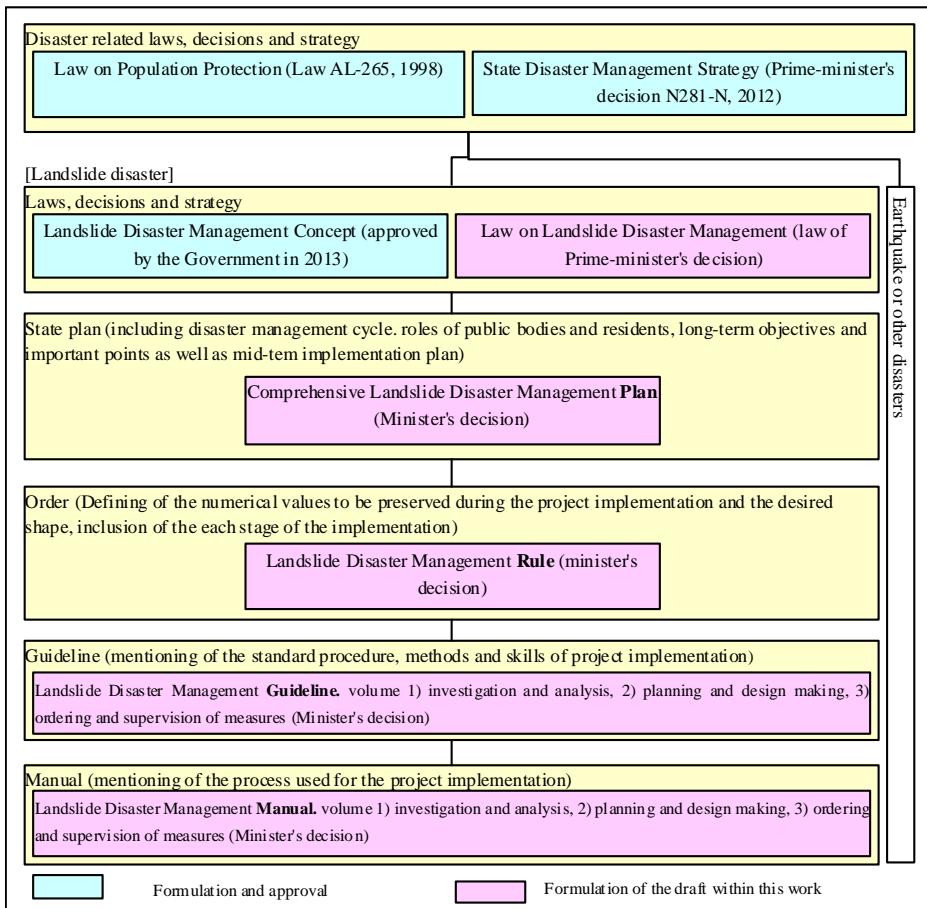


Figure 3 Brief description of laws and decisions to be prepared within this work (draft)

mention the cost-benefit ratio for promoting and during the implementation of risk reduction measures

- Planning and implementation of measures based on the actual situation of RA: Based on the size of the state budget of RA (about 1,170 billion AMD per year as of 2014), implementation of large-scale measures is difficult. Therefore, enough attention should be paid to this circumstance during the design, planning and implementation of pilot projects in the framework of this work.
- Strengthening of the official assistance provided to the residents : to establish and strengthen a resident support system lead by WG with cooperation of Crisis Management State Academy (CMSA) and RS of MES RA

(3) Approach 2 : Establishment of the system of implementation of landslide countermeasures

The project tackles with the following four issues as Approach 2.

- Regulation of the legal framework: A plan of work is shown in Figure 2.
- Establishment and strengthening of the organizational structure: to establish an organization system that WG coordinates related ministries so that each Ministry can implement countermeasures (Figure 3).
- Securing of budget: upon mentioning the cost-benefit ratio described in the previous point, assistance and consultancy will be provided for the smooth process of securing the necessary budget and for the preparation of the draft of budget provided by related Ministries and

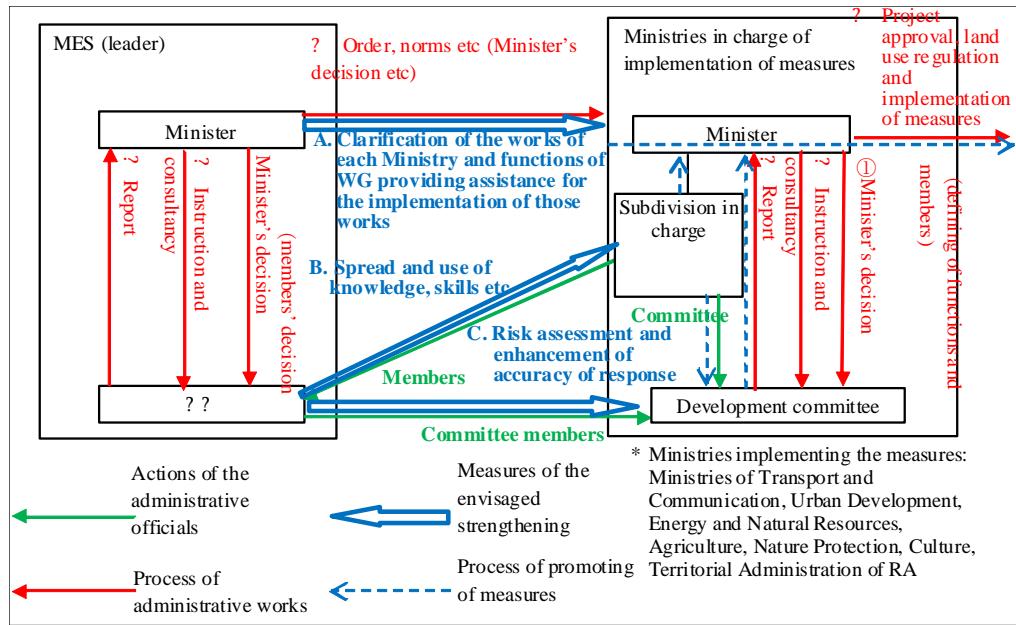


Figure 4 Strengthening of the process of administrative works and organizational structure related to the landslide disaster management (draft)

submission of it to the Government of RA by the Ministry of Emergency Situations of RA according to the New Concept.

(4) Approach 3 : Disaster risk reduction through the formulation of a comprehensive plan and implementation of measures

- Formulation of the plan: The comprehensive landslide disaster management plan to be formulated within the project should have a content including the disaster management cycle (proactive, urgent, rehabilitation/reconstruction).
- Implementation of Pilot project: Measures aimed at risk reduction should be taken within the pilot project as a joint work of WG. The actions to be taken include the formulation of the plan of landslide countermeasures, securing of budget, implementation of measures, monitoring etc. Through the implementation of the pilot project the WG members will acquire skills and capacities which will give an opportunity to implement risk reduction measures continuously through the cooperation with the residents after the completion of the Project.

Reference*

Japan International Cooperation Agency “JICA” (2006) : The Study on Landslide Disaster Management in The Republic of Armenia (Final Report).