



Initiatives and Requirement of Government Agencies for Inventory and Stabilization of Earthquake Induced Landslides



Consultative Workshop on Landslide Inventory, Risk Assessment and Mitigation in Nepal
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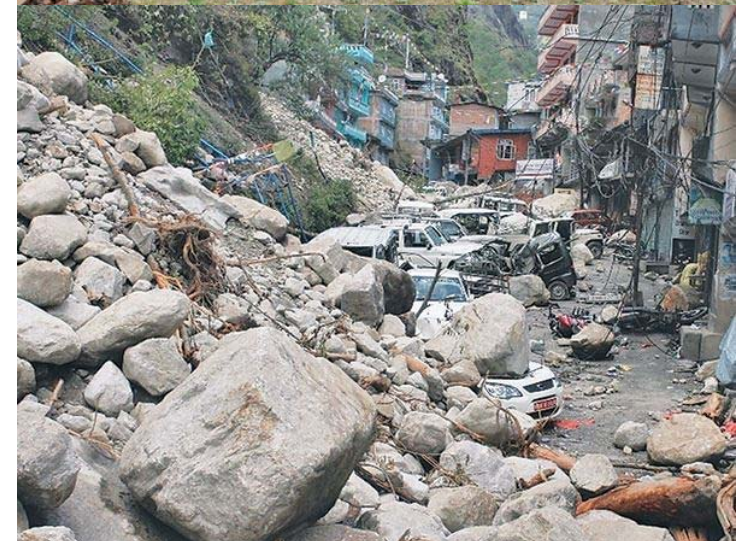


Introduction

Nepalese mountains are naturally susceptible to landslides



Gorkha Earthquake (25 April 2015) followed by hundreds of aftershocks caused thousands of landslides and cracks

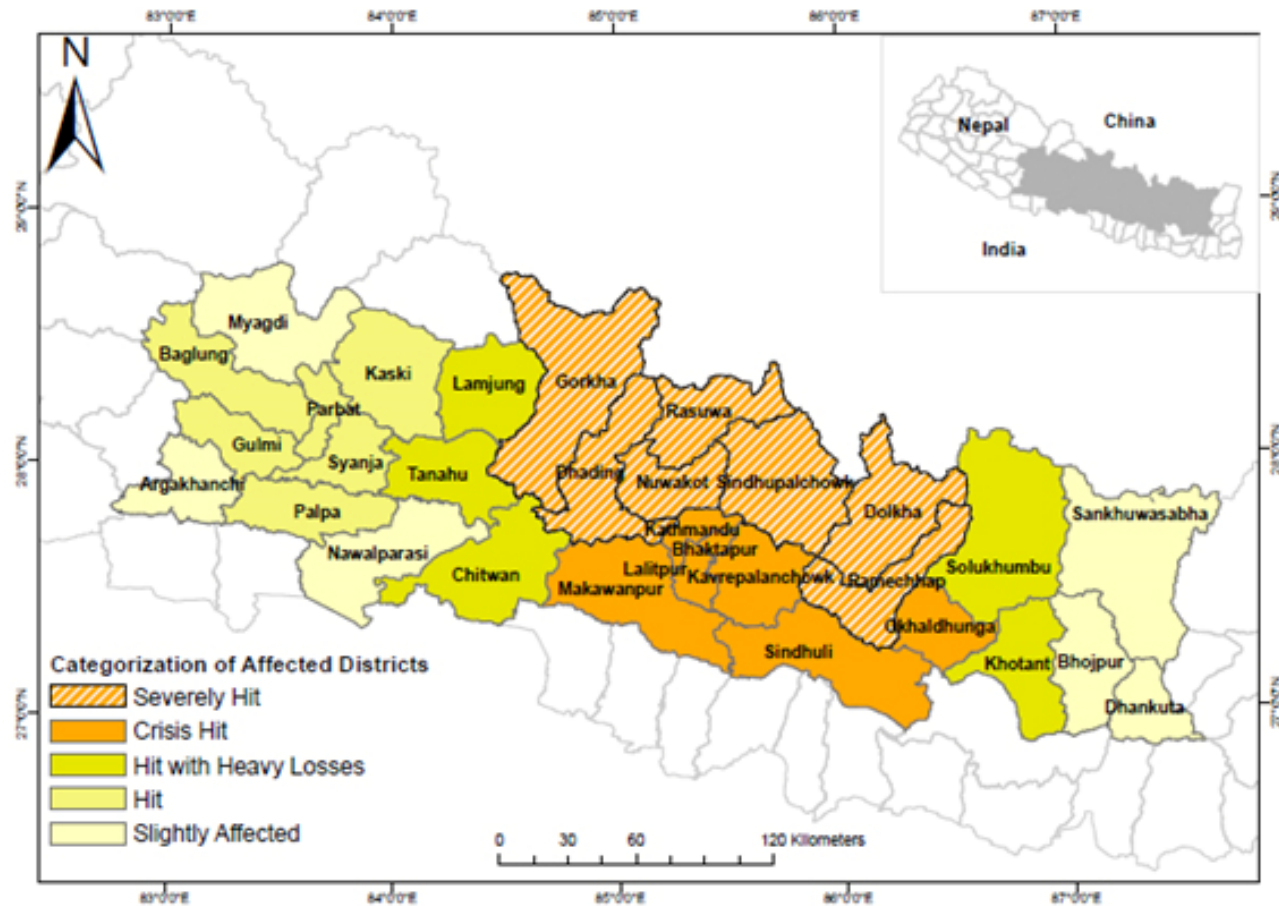




Introduction...

31 of Nepal's 75 districts affected by Gorkha Earthquake

GORKHA EARTHQUAKE 2015 AFFECTED DISTRICTS

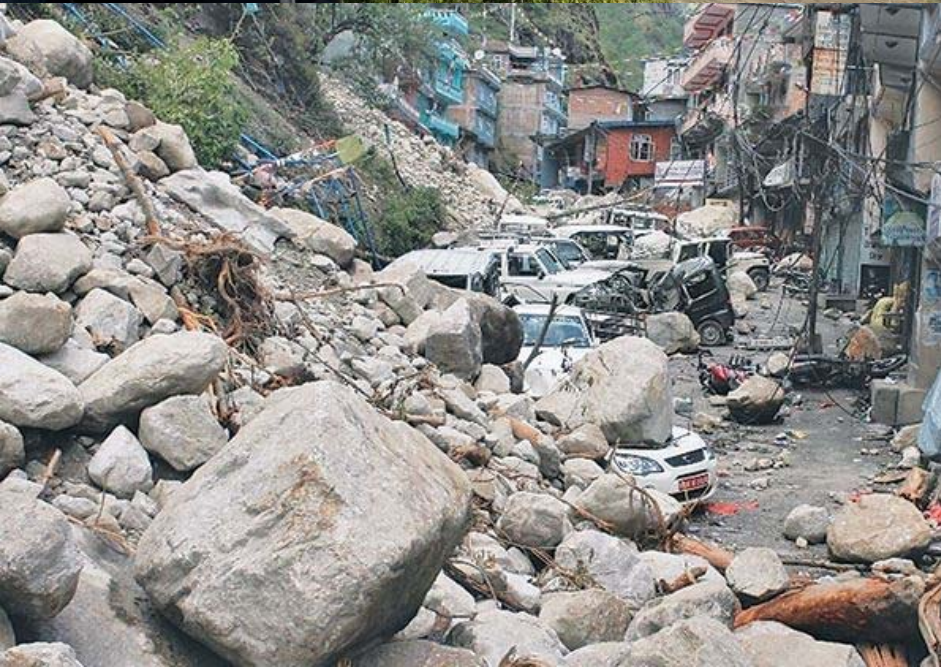


Source: GoN/MoHA as of 21 May 2015

Loss and Damage due to Gorkha Earthquake

- Catastrophic earthquake caused over 8,790 casualties and 22,300 injuries (National Planning Commission, Government of Nepal (as of 7 June 2015)).
- Hundreds of those deaths were due to landslides, which also blocked vital road and trail lifeline routes to affected villages.
- Landslides caused by the earthquakes continue to pose both immediate and long-term hazards to villages and infrastructure within the affected region.

Landslides caused by the earthquakes continue to pose threats to villages, settlements, agricultural lands and infrastructures



Earthquake Induced Landslides and Cracks

- Complete inventory of landslides – not available so far
- Most of the landslides observed on mountain tops and mid slopes are rock fall and translational landslide. Some of the landslides near valley, along both sides of streams/rivers are deep seated rotational landslides
- Landslides occurred around (above, below, both sides) and inside the villages/settlements have damaged/destroyed life (human as well as household animals) and property (houses and other infrastructures)

Potential Threats

- More landslides may trigger in cracked areas as well as active landslide areas.
- Gully formation and accelerated soil erosion may increase many folds.
- Cracked/damaged agricultural land forest areas will be further degraded
- Huge amount of sediment will be transported to downstream areas which may cause flood and sediment disaster in the downstream areas
- Landslide damming is also seems a potential threat.

Post Earthquake Disaster Challenges

Immediate challenges (Priorities)

- Identification and prioritization of landslides and crack zones for treatment in the near future and prevention of further landslide
- Construction of safe drainage in upstream of prioritized landslide area and around of crack zones to prevent runoff water entering inside the landslides/cracks so that it will not trigger another landslide
- Existing water source rehabilitation
- Rehabilitation of drinking water supply and irrigation schemes
- Rehabilitation/improvement of trails and roads

Post Earthquake Disaster Challenges...

Mid Term challenges (Priorities)

- Detail study of landslides including landslide inventory, hazard, vulnerability and risk mapping.
- Treatment of landslides which pose direct threat to life and property
- Detail study of avalanches and glacial lakes
- Mapping of ecosystems and their services
- Reconstruction or new construction of earthquake resilient, conservation friendly basic water infrastructures (water source protection and development) and slope stabilization structures, emphasizing bioengineering techniques

Post Earthquake Disaster Challenges...

Long Term Challenges (Priorities)

- Landuse planning based on land capability classification
- Integrated Watershed Management based on landuse plans- focus restoration of ecosystem services, degraded land rehabilitation, natural hazard prevention (landslide treatment, gully treatment) land productivity conservation water source protection and development infrastructure protection
- Transformation of organizational and institutional setup of the Government organizations

Gaps:

- Credible complete data base of landslides and cracked areas is still unavailable.
- There is no harmonized methodology of landslide inventory, hazard, vulnerability and risk mapping
- There is need of slope protection to prevent rock fall but concerned Government organizations are in search of appropriate technology
- There is need of a credible knowledge base on landslide monitoring, early warning and rehabilitation / treatment tools and techniques to address the problem.
- GON has inadequate trained human resource to address various landslide issues.



DSCWM's Initiatives



- Prepared an action plan for landslide treatment and prevention in consultation with other GON agencies
- Mobilized all concerned District soil Conservation Office (DSCO) staff for landslide data/information collection
- All concerned DSCO staff are engaged in landslide treatment/prevention and providing services to the local people as far as possible
- DSCWM is coordinating with other Government organizations, development partners, academic institutions, professional organizations and relevant I/NGOs in order to address the problems effectively

DWIDP's Initiatives

- Preparedness and emergency action plan for landslide treatment: gabion box, nylon box, bamboo and sacs arranged in the division offices for emergency use.
- Arrangement for landslide disaster data collection.
- Initiating satellite imagery analysis for preparation of landslide hazard and vulnerability maps.
- Preparing status report by comparing satellite imagery of before and after quake with field data.
- Field visit of the disaster sites to prepare the status report.
- Mid term and long-term mitigation measures will be planned after rainy season as per the report.
- Initiating preparation of landslide distribution map using stereo images with ADPC/WB assistance.
- Landslide hazard and vulnerability mapping of Gorkha and Sindhupalchowk districts is in the process with the help of JICA



Concerned Government agencies of Nepal are committed to address the pertinent issues by building own capacity and collaborating with our development partners

Thank You !