



## National Landslide Response Plan

**The primary mission of government** in an emergency is to protect the lives and property of its citizens. Regardless of how well all systems are organized to provide assistance, the unpredictable nature of a landslide and the time and space factors involved dictate that the local jurisdiction must be prepared to cope with the initial impact of a landslide on its own.

Recognizing that routine emergency services will, by their nature, be inadequate to cope with the effects of such a disaster, it is the duty of local government to provide for the emergency expansion of its survival capabilities within the limits of available resources.

This Plan is a Hazard Specific Annex to the National Emergency Management Plan (ODPMEMP). It has been developed to provide a sound basis for emergency programmes to respond to landslides and to establish the organizational and operational concepts and procedures designed to minimize the impact of this hazard.

In preparation of this plan, emergency duties and responsibilities have been assigned, to the extent possible, to agencies having the same or similar responsibilities in the ODPMEMP's Basic Plan. Where necessary, agencies should develop specific standard operating procedures (SOPs) explaining which tasks need to be performed and how they will be accomplished in the event of a landslide.

To be prepared to recover from the effects of a landslide requires constant development and revision of emergency procedures, training of staff and auxiliary personnel, and exercises. This process and the results of actual emergency response operations will allow refining of this incident annex and associated SOPs.

### Situation and Assumptions

- Landslides are triggered by intense rainfall, earthquakes or coastal erosion
- Most dangerous landslides are debris flows where slope materials become saturated with water resulting in a slurry of rock/mud picking up trees, houses, and cars; may block bridges/tributaries and cause flooding
- Multiple landslides can exceed the capabilities of any one entity and require specialized assistance and support from a variety of national, regional, and military organizations
- The vulnerability to landslide incidents is continually increasing in certain areas due to large scale housing and infrastructure developments
- National and regional response organizations must develop the tactical capability and acquire the necessary tools to assist in promptly identifying the hazard(s) with which they are confronted and develop an effective incident action plan with the necessary support resources
- Site restoration/rehabilitation will be conducted to the extent that is technically feasible, economically practical and prudent from a health, environmental and public safety perspective
- Site remediation will be overseen and monitored by the appropriate agencies that have jurisdiction under the law and possess the necessary technical knowledge and expertise

**The purpose** of this plan is to:

- Define the roles, responsibilities and authorities of all key agencies in responding to landslide incidents
- Establish procedures to report landslide incidents to proper authorities through established channels of communication
- Demonstrate the capability to effectively analyze/validate information from a variety of sources; determine its appropriate application and dissemination to various agencies in support of response/recovery initiatives
- Identify the appropriate resources to respond to incidents and provide a framework to coordinate volunteer resources in support of national disaster response and recovery operations.

**Scope:** Applies to all agencies responding to landslide incidents, and is designed to adapt to and meet the challenges of these types of incidents adopted by the National Incident Management Systems (NIMS).

### Organization

- The Prime Minister directs the national response through the Minister responsible for Disaster Risk Management (DRM), who, through the CEO, ODPM, is responsible for the overall coordination of emergency response by state agencies, quasi-public organizations, and private sector.
- The ODPM is the primary coordinating agency for the state and operates the National Emergency Operation Centre (NEOC) on a 24-hour-a-day basis. The NEOC is the central point where all entities report landslides and through which assistance is requested
- The NEOC integrates the Emergency Support Function (ESF) framework, Incident Command System (ICS) and the elements of NIMS into an effective and efficient organizational structure that facilitates coordination of assistance and support to affected communities within the country
- State ministries, agencies and other stakeholders make up the organizational framework that involves the response and recovery efforts; framework changes depending on incident location and magnitude
- ESF-1, MOWT, will be activated at the NEOC as necessary to support field operations; will be staffed by representatives from the critical public and private stakeholders necessary to support and address public safety, and occupational safety initiatives/issues that may arise. ESF-8 (Medical) will provide technical assistance and support to ESF 1 as required.



## Concept of Operations

- a) All major landslide incidents or those that can cause significant disruption to traffic flow are to be reported to the NEOC and any other critical cell that is responsible for coordinating/supporting emergency response
- b) Local government (assisted by ODPM) will provide public warnings, initiate protective actions, and seal off the affected area. State agency assistance is to be requested through the NEOC when the magnitude or technical demands exceed the capability of local government
- c) A field command post will be established at the scene of incidents that require on scene coordination of response by national and regional agencies
- d) On scene coordination of the response will be accomplished within the framework of NIMS using the ICS. ICS incorporates national and regional agencies and responsible parties into a single organizational framework – Unified Command (UC); UC will develop a response strategy after conducting a situation assessment, to cover: →
  - 1) Nature/locations of landslide
  - 2) Potential impact on movement
  - 3) Safety/availability of response resources
  - 4) Technical support required
  - 5) Setting priorities
- e) Emergency Alert System (EAS) will be activated as necessary to alert the public of any disruption to movement, or a threat to life/property requiring immediate protective actions – evacuation/in-place sheltering
- f) ESF 1 will be established, if necessary, to coordinate national and regional resources; MOWT will be the lead state agency depending on magnitude/location of landslide. MOLG through its Municipal Corps will be the lead state agency depending on location/magnitude of incident

## Execution

- a) This plan is in effect when signed by the Prime Minister (or designee) and may be executed upon proper notification of a landslide incident to ODPM
- b) The ODPM will coordinate national and regional response and recovery support to local governments
- c) CEO, ODPM is to maintain this Plan as per established procedures; participating agencies are to recommend improvements as identified
- d) This Plan is to be forwarded to all organizations and individuals with responsibilities for its implementation, and other recipients of the ODPM EMP

## Roles and Responsibilities

### *Office of Disaster Preparedness and Mgmt (ODPM)*

- a) Develop/maintain plans and SOPs for the full spectrum of landslide hazards – landslide hazard assessments; susceptibility mapping
- b) Manage NEOC to coordinate statewide response to disasters, and ensure the most effective and efficient integration/utilization of national and regional assets activated
- c) Operate/maintain a Nat'l Communications Ctr (NCC) to receive/prepare/disseminate notifications, warnings, and associated protective actions
- d) Develop SOPs to facilitate the communications and operational interface between all stakeholders during all phases of disaster management
- e) Develop/maintain a nationwide landslide emergency response programme to protect persons and property from the effects of landslide incidents
- f) Establish standard and comprehensive procedures to ensure the safety of emergency responders while responding to landslide incidents
- g) Establish/support regional landslide teams in cooperation with local government and other critical stakeholders
- h) Coordinate the preparation/dissemination of public information releases with the appropriate stakeholders
- i) Coordinate needs assessment and damage assessment operations
- j) Coordinate disaster assistance/recovery operations; GIS support

### *Ministry of Works and Transport (MOWT): Highways Division*

- a) Develop/maintain/implement plans and procedures to prevent, mitigate, and effectively manage and recover from adverse landslide incidents
- b) Utilize data in defining the area impacted and at risk
- c) Support the collection, analysis, and assessment of meteorological data and any impact it may have on effectively managing the incident

- d) Assist developing the necessary protective actions and guidance for emergency workers and for the area at risk based on the assessment of the data received
- e) Assist developing of public information announcements for the disaster area
- f) Assist in development of long-term environmental restoration site plans to include goals and possible options/strategies
- g) Provide technical assistance to state agencies, ESFs, and local jurisdictions re: maintaining/restoring of infrastructure that may be vulnerable to landslides
- h) Assist state agencies and local government entities in the selection, establishment, management, and closure of debris storage and reduction sites
- i) Act as lead agency for management of long-term remediation and restoration
- j) Provide GIS support to the NEOC as requested

### *Ministry of Local Government (MLG): Municipal Corporations*

- a) Develop plans/procedures to coordinate support to local response teams
- b) Coordinate response/recovery actions for landslide incidents
- c) Coordinate deployment of resources needed to stabilize extended incidents
- d) Assist in incident evaluation and assessment
- e) Conduct landslide monitoring as required
- f) Recommend protective actions for responders, essential facilities comprising the medical care system, and the public
- g) Provide technical advice, as requested, to medical facilities in developing and maintaining a capability to receive/treat/care for contaminated patients

### *Ministry of Health (MOH)*

- a) Assist regional command hospital in coordinating patient allocation and movement to other locations if the number of casualties exceed the capability of an Emergency Medical Services (EMS) region
- b) Assist ODPM NEOC in planning; coordinate, as required, any address about public health issues arising during the recovery
- c) Establish plans for coordinating state support to mass casualty/fatality incidents; provide model procedures for incorporation in local plans, and procedures for mass casualty incidents

### *Ministry of the People and Social Development (MOPSD)*

- a) Develop/maintain plans to establish and manage mass care shelter operations in a timely manner, in coordination with local gov'ts and ODPM
- b) Coordinate development of a plan to promptly establish/manage a Family Assistance Centre (FAC) following a mass casualty event (to coordinate with appropriate entity to facilitate the exchange of information and provision of services to relatives of victims)
- c) Assist MOHE in determining the requirements for temporary housing

### *Trinidad and Tobago Police Service (TTPS)*

- a) Coordinate law enforcement for incident response/recovery operations
- b) Assist in the dissemination of warning in coordination with the NEOC
- c) Augment emergency communications on site
- d) Assist in evacuating areas at risk in coordination with other ESF(s)
- e) Implement traffic control actions in and around site
- f) Establish necessary security and accessibility policies around site and evacuated areas in coordination with all law enforcement entities
- g) Establish/maintain notification and warning procedures to activate plan, response teams, and support resources and services

### *Trinidad and Tobago Defence Force (TTDF)*

- a) Provide a liaison to NEOC and Unified Command to facilitate the integration of military resources into emergency operations
- b) Provide support to national response and recovery operations as necessary

### *Trinidad and Tobago Fire Services (TTFS)*

- a) In case of injuries, assist in medical response
- b) Conduct Search and rescue as necessary if homes or vehicles are impacted by landslides