



# Disaster Risk Management in Bhutan (2019-2023)

## *Greater resilience to natural disasters and climate change*

### Hazard and Capacity Overview

Bhutan is prone to hazards including earthquakes, floods, glacial lake outburst floods (GLOF), landslides and forest fires. To better prepare for disasters, the Royal Government of Bhutan (RGoB) has made substantial progress in Disaster Risk Management (DRM). The 2013 Disaster Management Act established the National Disaster Management Authority and Disaster Management Committees in all 20 dzongkhags (districts), and all dzongkhags now have a Disaster Management Contingency Plan (DMCP) in place.

With the increased risk of multiple natural hazards in Bhutan, capacity strengthening of the national disaster management readiness with better coordination, upgraded data systems and increased awareness is a priority for the RGoB. Further, a disaster hitting Bhutan today, with the country in distress due to the COVID-19 pandemic, could have devastating impact on Bhutan and its people.

### Focus and Partners

The WFP Country Strategic Plan (CSP) 2019-2023 identifies enhancing resilience to natural disasters and climate change as a focus area with the CSP Strategic Outcome 2: "Government has strengthened capability to address food security and nutrition challenges and prepare for and respond to crises."

WFP Bhutan is the UN lead in Bhutan on DRM and assists the RGoB in five areas: governance and coordination, data preparedness, logistics, emergency telecommunications and food security. To carry out our support, WFP works in close partnership with the Department of Disaster Management (DDM), the RGoB, the World Bank, JICA, UNICEF, UNDP and WHO. The following lists the key areas for WFP's support to develop stronger national resilience to disasters and climate change over the period 2019-2023.

### Governance and Coordination

To enhance governance and coordination in DRM, WFP and the DDM have developed a Roadmap for Disaster Risk Management in Bhutan. The Roadmap, developed in 2019, sets out priority actions for the RGoB, UN agencies and other development partners to address the identified gaps in DRM. The Roadmap has six focus areas: Disaster Awareness; Data Preparedness; Governance; Coordination; Resourcing; and Sector Preparedness. The Roadmap is currently being updated with the DDM, in light of the COVID-19 pandemic and to reflect recent progress, and it will be published in the 3<sup>rd</sup> quarter of 2021.

### COVID-19 Response

WFP works closely with the Department for Disaster Management (DDM) and government partners to support overall COVID-19 coordination and response in the areas of food security and logistics. This includes capacity support to the front liners, preparing for future pandemics, and supporting the National Food Security Reserve in securing food stocks for 6 months for the whole population.

WFP is supporting the DDM with Disaster Management Contingency Plans (DMCPs) at the national and district levels in terms of understanding the current gaps, identifying areas for strengthening the implementation and use of DMCPs, introducing simplified user friendly DMCPs and strengthening the capacity and enhancing the technical skills of Disaster Management Officers of the DDM in updating the DMCPs.

WFP is supporting immediate capacity gaps in emergency mobility and communication for front-liners during the COVID-19 pandemic and disaster response as well as in strengthening the coordination and communication mechanism of front-liners.

### Data Preparedness through the 72-Hour Approach and Digital Vulnerability Database

To strengthen data preparedness to disasters, WFP supports the RGoB in setting-up and implementing the 72-Hour Rapid Assessment Approach and Digital Vulnerability Database to estimate the likely impact of a disaster and enable a response within that timeframe. The 72-Hour Approach provides critical information to immediately respond to disasters based on pre-disaster vulnerability data such as demographics, poverty, food insecurity, access to roads, health stations and schools, combined with data from the actual disaster event. This offers a solid basis to make operational decisions even in extremely complex situations, with information being refined through continuous updates as new data becomes available from the im-

part of the disaster. The 72-Hour Approach ranks affected areas based on the geographic impact and population vulnerability using overlay models, and it produces reports to the RGoB and Development Partners with recommendations for sector response to the disaster every 12 hours after the disaster event.

### Earthquake Impact Assessment Modelling

To further strengthen data preparedness, WFP partnered with Durham and Newcastle Universities to develop an assessment model of earthquakes in Bhutan.

The modelling was completed in October 2020 and presented quantifiable potential earthquake impacts in terms of fatalities, injuries, and displaced persons in the districts of Bhutan in 110 possible scenarios. Populations living in the Himalayan region are the most at-risk of earthquake disasters globally. In the worst case, an earthquake with a magnitude of 8.5 on the Richter scale occurring in Bhutan may result in approximately 9,000 fatalities, 10,000 people with serious injuries and 45,000 people displaced nationally. There are 5 different scenarios in which more than 5,000 fatalities occur nationally.



A house damaged by an Earthquake in Bhutan

DDM and WFP held a workshop in November 2020 with national partners to identify earthquake preparedness and mitigation measures across 8 clusters, namely Public Order, Food Security, Health, Logistics, WASH, Housing, Emergency Telecommunications, Power and Energy. Measures such as reinforcing buildings and prepositioning of water, food and medicine to remote areas to save lives and livelihoods and build stronger national earthquake resilience were identified and will be further elaborated by sectors and tested through a Functional Simulation Exercise in the latter part of 2021.

### Glacial Lakes Outburst Flood Research

According to climate projections, the mean annual temperature in Bhutan will increase by 0.8 – 1°C by 2039 from 2010. This will increase the risk of climate change related disasters, such as GLOFs, with the potential to undermine the country's resilience and ability to safeguard lives, livelihoods and development progress.

The third data preparedness component is a partnership with Newcastle University on the impact of GLOFs. With 567 glacial lakes in Bhutan, the probability of GLOF occurrence in Bhutan is high. Thus, the project seeks to quantify potential triggers, and subsequently undertake numerical modelling to translate GLOF hazards to downstream flood risk. Bhutan is particularly vulnerable to GLOFs, as the population and hydropower infrastructure are concentrated in the main river valleys. This research project will provide vital information to support early

warning and prevention activities and will further feed into the 72-Hour Approach and Digital Vulnerability Database.

### Logistics

WFP supports logistics preparedness capacity strengthening in Bhutan. In close partnerships with MOAF and DDM, WFP is conducting a gap analysis and capacity needs mapping to improve logistics preparedness. In collaboration with relevant government and humanitarian partners, WFP is co-leading the development of a National Logistics Preparedness Action Plan. This plan is being developed and implemented through a National Logistic Preparedness Working Group to support Bhutanese authorities to operationalise the existing logistics coordination mechanism and contribute to enhanced emergency logistics readiness.

Furthermore, WFP is providing technical guidance to enable the RGoB and partners to swiftly respond to various type of disasters by strengthening the ministries' logistics desks to address storage, handling and transportation during emergencies. Recognizing the immediate needs in storage systems for food and emergency supplies during the COVID-19 pandemic, WFP has so far provided DDM with 8 mobile storage units, augmenting storage capacity by approximately 4,000 MT. WFP also assists DDM in establishing a humanitarian staging area and potential regional hubs that could be utilized as a strategically located infrastructure for emergency response. WFP and relevant government partners will also conduct a joint Logistics Capacity Assessment to collect information and validate availability of logistics infrastructures during emergency response and to widen coverage of logistics partners' information across the country.

### Emergency Telecommunications

Through WFP's leadership of the Emergency Telecommunication (ETC) Working Group, WFP is working with partners to further strengthen the ETC sector. WFP conducted an Information and Communications Technology Capacity Assessment to identify priority actions to ensure the continuity of telecommunications activities during an emergency. Based on this, WFP, the RGoB and development partners drafted an ETC preparedness and response action plan to enhance coordination and capacities in ETC.

### Food Security

WFP supports the RGoB on food security preparedness and response during the COVID-19 pandemic. This includes assistance to the development of a National Food Security Emergency Action Plan for COVID-19 and development of SOPs for targeting and food distribution. Further, WFP is providing assistance to the RGoB and private partners on food safety and quality management under the National Food Security Reserve; with development of national guidance; delivering of training for food safety and quality management at the warehouse; transportation and at retailer level; running social media awareness campaigns; and providing financial assistance as well as infrastructure support.

To increase coordination among the food security partners, WFP is setting-up a food security cluster by the end of 2021 with government and development partners. Further, WFP also assists the RGoB to understand the effects of climate change on livelihoods and food security using WFP's Consolidated Livelihood Exercise for Analysing Resilience (CLEAR).

