NEPAL
Floods and landslides

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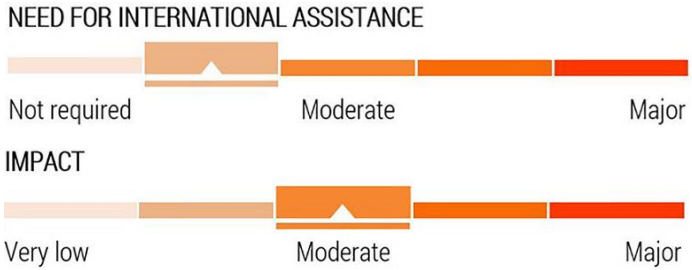
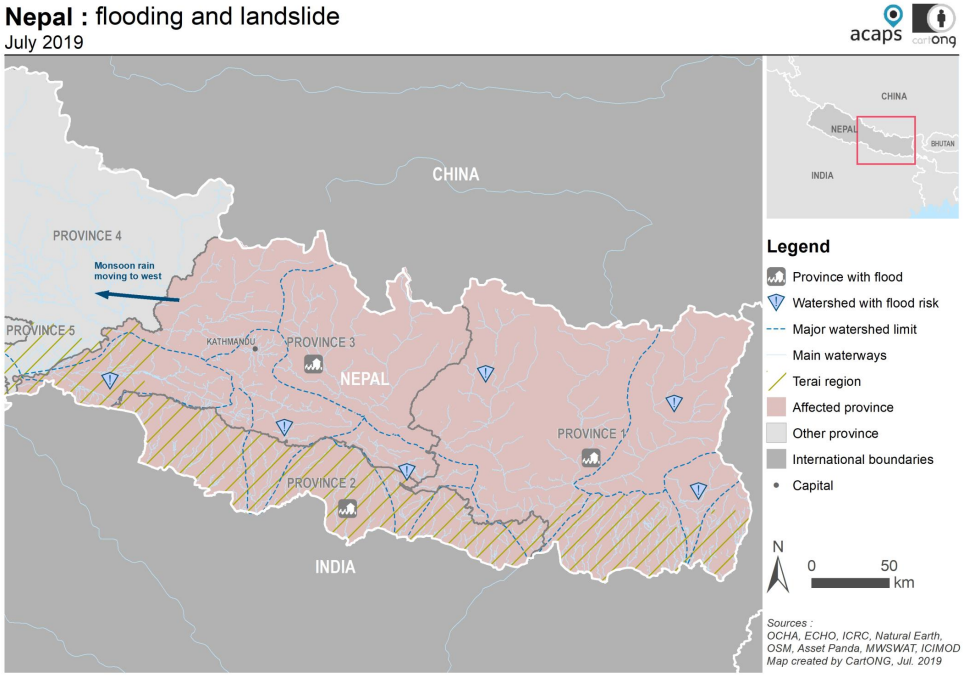
Briefing note – 16 July 2019

Heavy rainfall since 11 July has triggered flooding and landslides across south-eastern and central Nepal. Provinces 1, 2 and 3 are worst hit, with province 2 as the most severely affected area. An estimated 75,900 people have been displaced across the country. Shelter, WASH, health and food needs are reported. As of 16 July, 78 people have been killed, 32 people are missing, and 40 others have been injured. Flooding and landslides have blocked and damaged roads and bridges, hampering the humanitarian response.





Anticipated scope and scale

Provinces 1, 2 and 3 in southeast and central Nepal are most severely affected by flooding and landslides since 11 July. Although rains in the southeast have weakened, **heavy rainfall is forecast over the central and western regions in the coming days.** As Nepal's monsoon season typically lasts until September, more months of elevated rainfall can be expected. New instances of flooding and landslides in the affected areas **would worsen humanitarian needs in the region.**

Key priorities

+75,900
people displaced

WASH
needs reported

Health
needs reported

Humanitarian constraints

Humanitarian operations are constrained by the blockages of roads, bad weather, and damages to the communication network. There is a particular concern for isolated rural communities who are living in hard-to-reach areas.

Limitations

The is currently very limited information on the impact and exact needs of the affected population. As assessments are ongoing, conflicting numbers are being reported. Weather conditions are evolving rapidly possibly influencing the timeliness of information.

Any questions? Please contact our senior analyst, Benedetta Cordaro: bc@acaps.org

Crisis impact

Since the end of June, large areas of Nepal have experienced moderate to heavy rainfall coinciding with the onset of the annual monsoon season (Online Khabar 20/06/2019). Heavy rainfall since 11 July has caused flooding and landslides in southeast and central Nepal, affecting provinces 1, 2 and 3 (OCHA 15/07/2019; India Today 15/07/2019). Province 2, located in the lowlands of the Terai region, seems to be particularly affected with about 80 percent of the land inundated (The Kathmandu Post 14/07/2019). It is unclear how many people are affected. However, across the country, an estimated 75,900 people are temporarily displaced (OCHA 15/07/2019; UNDP 2017) . As of 16 July, 78 people have been killed and 40 others have been injured. At least 32 people are missing (NEOC 16/07/2019).

Since the start of the rains, 75 landslides and 54 flood events occurred across the country (ECHO 15/07/2019). The monsoon rains have inundated low-lying towns and villages. Embankments have started to erode by rain-fed rivers, putting houses in nearby settlements at risk of flooding. Landslides and flooding have caused significant damages to road infrastructure, mainly in rural areas (The Kathmandu Post 12/07/2019).

The government issued a flood warning for the Kankai, Koshi, Tamor, Bagmati, Kamala, East Rapti watersheds in east and central Nepal (OCHA 15/07/2019). However, rains are forecast to weaken in the eastern and central part of Nepal and to shift towards the west of the country (ECHO 14/07/2019; ECHO 15/07/2019).

Assessments are ongoing and information on current humanitarian needs is very limited. Key needs reported are clean drinking water, tarpaulins and food (OCHA 15/07/2019).

Shelter: It is unclear how many houses have been destroyed by the flooding and landslides. At least 16,500 households, or 75,900 individuals (household size: 4.6), are displaced (OCHA 15/07/2019). An unknown number of families are reportedly trapped in their houses sheltering on rooftops (CNN 13/07/2019). Operations to rescue stranded families are ongoing (ECHO 14/07/2019). A number of people have been evacuated to nearby schools and houses (The Guardian 14/07/2019). Additional shelter assistance is needed (OCHA 15/07/2019).

During the 2017 monsoon floods, approximately 3,000 houses were destroyed and 8,000 were partially damaged. Flooding also displaced more than 40,000 people (IFRC 14/08/2017).

WASH: Previous instances of monsoon-related flooding have led to an increase in WASH needs among affected communities. Floods can lead to shortages of drinking water through the destruction of water pumps and boreholes. Sanitation facilities are also at risk of being destroyed or flooded following extended periods of elevated precipitation (IFRC 14/08/2017).

The ministry of health reports that most of the water resources in Province 2 have been contaminated by floodwaters (India Today 15/07/2019). Affected families are in need of clean drinking water (OCHA 15/07/2019).

Health: The onset of the monsoon season in Nepal is associated with a number of health concerns, in particular the spread of waterborne diseases such as diarrhoea, cholera, Hepatitis A, Hepatitis E and typhoid. Mosquito borne illnesses such as malaria and dengue also tend to spike during the monsoon months. If sustained rainfall leads to extensive flooding, the risk of a disease outbreak will likely be compounded (WHO 26/05/2015; GSDRC 19/04/2016). The Epidemiology and Disease Control Division of the Ministry of Health warns that people in the affected areas are vulnerable to snakebites (India Today 15/07/2019).

Food: Affected families are in need of food-assistance (OCHA 15/07/2019). It is unknown how the current flooding and landslides have affected farmlands. Even though Nepal has experienced three consecutive above average harvests, food security remains a pressing challenge across the country, with approximately 4.6 million people who are food insecure (FAO 04/06/2019). The number of food insecure people will likely increase if flooding leads to the destruction of farmland and productive assets.

Protection: Protection has been highlighted as a priority area of concern in the 2019 Emergency Response and Preparedness Plan prepared by the HCT and Government of Nepal for monsoon flooding. Vulnerable groups such as women, children, elderly, isolated rural communities, and physically disabled are likely to face an elevated risk of being exposed to protection risks (HCT 20/06/2019).

Impact on critical infrastructure

Flooding and landslides have inflicted significant damage to bridges and roads across the affected region (The Kathmandu Post 12/07/2019). At least 14 highways across the country were blocked as a result of the flooding and landslides. The National Emergency Operation Centre have started operations to clear the debris and reopen the highways for traffic (CBS news 15/07/2019).

Flood waters affected at least one hospital in the country. Koshi Zonal Hospital in Biratnagar district in the southeast was submerged. (The Kathmandu Post 12/07/2019). It is unclear what the current state of services is.

The Meteorological Forecasting Division warned that air and road traffic could be affected due to low visibility (India Today 15/07/2019).

Power cuts occur regularly in Nepal during the monsoon season as a result of damage to electricity infrastructure (The Himalayan 23/06/2019).

Communication networks are reportedly affected (ECHO 14/07/2019; The Guardian 14/07/2019).

Vulnerable groups affected

Poor rural communities: Farmers are particularly vulnerable to climate shocks, such as flooding. Previous floods in Nepal have disproportionately affected rural communities which are harder for humanitarian actors to reach, and may become cut off as a result of roads and bridges becoming obstructed by landslides (UN 14/08/2017).

Socially excluded groups and minorities: Members of marginalized minority groups such as the Dalits face an elevated underlying level of vulnerability, and are likely to be affected particularly acutely by flooding. Past experience from floods in Nepal have shown that marginalized groups are at risk of being overlooked by emergency response efforts (The Wire 14/09/2017).

Humanitarian and operational constraints

Damages to roads and bridges are hindering the access to affected communities. Major highways, including the ones connecting to the capital, have been completely or partially obstructed hampering the supply of emergency services to the southern plains. Bad weather is hindering helicopter operations. Access constraints can be expected for isolated rural communities. Operations are further constrained by damages to the communication network (ECHO 14/07/2019; The Guardian 14/07/2019).

When flash floods have struck the Terai region in the past, humanitarian access has tended to be particularly limited for rural communities (UN 14/08/2017).

Aggravating factors

Continuation of Monsoon Season

As the 2019 monsoon season, which traditionally lasts from June–September, began relatively recently in Nepal, several more months of elevated rainfall can be expected. Further rainfall will likely increase the vulnerability of people residing in low-lying areas in the Terai region. The occurrence of additional flooding and landslides in the affected region could compound the current humanitarian situation. With already saturated groundwater levels, any further rainfall will have a fast and direct impact on water levels across the affected districts (Government of Nepal 2019).

Socioeconomic conditions of affected areas

People living in the Terai region are exposed to an elevated level of socioeconomic vulnerability, which will likely aggravate the potential impact of flooding. High levels of poverty and socioeconomic marginalization increase the likelihood that people will resort to negative coping strategies when exposed to natural hazards such as flooding.

Deforestation

In recent years, deforestation in areas adjacent to the Terai lowlands has increased the vulnerability of local communities to flooding and landslides (Himalayan Times 27/02/2019). Most deforestation has occurred as a result of unsustainable extraction of forest-based resources, as well as the conversion of forested areas to settlements (Kathmandu Post 10/05/2019).

Increased tensions with Indian communities

In recent years, the relationship between Indian and Nepalese communities along the border have worsened during the annual monsoon season. Nepalese communities have blamed India for installing structures along the border that block the floodwaters from flowing into India leading to inundation of thousands of hectares of land in Nepal. The rising tensions resulted in clashes between locals in 2016 (BBC 16/07/2019).

Key characteristics

- Demographic profile: Population (2011 census): 26,494,504. Ethnic groups: Nepalese 58%; Bihari 18%; Tharu 4%; Tamang 4%; Newar 3%; Magar 2%; Abadhi 2%; other 12% (Populstat). Rural population: 83% (2012) (UNFPA). Population below poverty line: 25.2% (2010) (WHO 2012). HDI (2014): 0.540 (145 out of 187) (Human Development 2014).
- WASH: Population with access to improved water: 88% (2012) (WHO 2012).
- Lighting and cooking: 62.8% of houses in Nepal have electricity. The majority use wood for cooking.
- Health statistics: People per physician: 13,777. Maternal mortality rate 190 per 100,000 (2012), Under-5 mortality rate: 42 per 1,000 live births (2012) (UNFPA). Leading diseases and illnesses include diarrhoea, gastrointestinal disorders, intestinal parasites, leprosy, and tuberculosis (Nepal Times 2011).
- Nutrition: The prevalence of stunting and wasting among under-five children in Nepal is approximately 40% and 10%, respectively (USAID 17/06/2019).
- Literacy rate average: The overall literacy rate for Nepal's adult population is approximately 60%, with approximately 49% for women (World Vision 08/02/2019).
- Weather: Nepal has a typical monsoonal, two-season year. The dry season runs from October to May and the rainy (monsoon) season from June to September (Visit Nepal).
- Location and Type of Housing/Infrastructure In the valleys, burnt or sun-burnt brick walls are used, with thatch or brick roofing. In the Terai, houses are built with bricks or mud. Higher in the mountains, stones are the primary materials used. Poorer populations use bamboo-reinforced mud walls (UN Habitat Nepal). The

western area is mainly farmland, and the poorer communities live in mud and straw huts, which wash away easily (The Guardian 18/08/2014).

Response capacity

Local and national response capacity

National, provincial, and local governments are all involved in disaster response efforts in Nepal. At the national level, the Ministry of Home Affairs plays an important role in coordinating the response efforts of different humanitarian actors. The Department of Hydrology and Meteorology (DHM) is responsible for managing early warning mechanisms and monitoring the level of rainfall in flood prone areas (Government of Nepal 10/07/2019). Since the 2017 monsoon floods, a greater emphasis has been placed on the role of local government authorities in responding to natural hazards through rescue and relief operations (Nepali Times 28/06/2019).

In conjunction with the Humanitarian Country Team and other international partners, the Government of Nepal has developed an Emergency Response and Preparedness Plan to address the potential impact of monsoon flooding in 2019 (HCT 20/06/2019).

Needs assessments and response are ongoing. DHM has sent mass SMS alerts to those living in the settlements on the river banks that are on high alerts (ECHO 13/07/2019). Search and rescue operations are ongoing and have increased as of 15 July. Local government is assisting the affected population (ECHO 15/07/2019).

International response capacity

A variety of UN agencies maintain a presence in Nepal including UNICEF, WFP, UNDP, and WHO and are positioned to respond to humanitarian needs that arise, in accordance with the 2019 monsoon flooding contingency plan coordinated through OCHA and the cluster system (HCT 20/06/2019). This plan has settled some preparedness measures. Numerous INGOs are also present in Nepal, though information about their specific response capacities and geographic distribution across flood-prone areas remains limited.

Information gaps and needs

- Although rapid assessments are ongoing, until their publication there are significant gaps on the current impact of the flood and landslide across Nepal
- Almost no information is available regarding the number and geographic distribution of people affected and in need humanitarian assistance in areas that have been exposed to the heavy rainfall
- Conflicting numbers of people affected and displaced are being reported
- The relative severity of needs remains largely unknown
- There is an information gap on the specific needs of isolated rural communities in the affected districts

Lessons learned

- Since the 2017 Monsoon floods that affected the Terai region, early warning systems have been improved and regular alerts are sent out. Recent events like the windstorm that struck Bara and Parsa districts in April 2019 demonstrate that there is still room for these mechanisms to be improved (Kathmandu Post 02/04/2019).

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July 2019