

Disasters in Nepal Come in Waves

17 June 2021



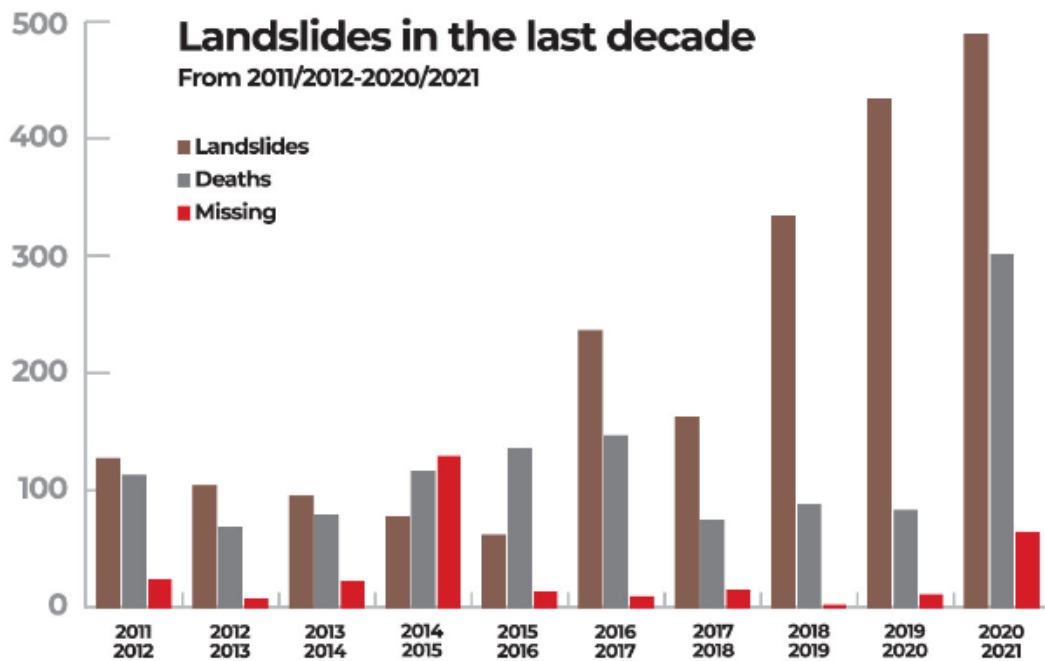
Mahendra Shrestha, 61, of Melamchi Bazar breaks down as he surveys the damage to his house on Wednesday.

Nepal sits upon a pyramid of problems: poverty, inequality, exclusion, domestic violence, social injustice, lack of food ... the list is long.

On top of all that, for more than a year now, Nepalese have struggled with the health and economic emergency set off by the pandemic. And this week, we suffered floods that killed at least 25, mostly in the same areas affected by the 2015 earthquakes.

Meanwhile, Nepal's predominantly rain-fed agriculture is affected by extreme weather events exacerbated by the climate crisis. Nepal had the worst wildfire season in living memory this spring. Right across the Himalayan foothills, the mountains burned from November till March – and at its peak, there were nearly 2,000 fires raging out of control.

The scorched earth barely had time to regenerate when the monsoon arrived this week with a bang. A low-pressure system lingered over Central Nepal from 13-16 June, dumping record precipitation, much of it in the trans-Himalayan region which is supposed to be in the rain shadow. The denuded slopes could not hold the water, and the runoff surged into rivers washing away homes, bridges, roads, and hydropower plants.



Disasters are of two kinds: ‘natural’ calamities that hit without warning, and slow-moving ones that worsen incrementally. Earthquakes, floods, and landslides get all the media attention — especially if there are good social media visuals. News, by definition, has to be unexpected, preferably sudden, and with lots of casualties in one place.

Journalism is less prepared to cover lingering crises, where thousands die over time, silently and scattered across remote areas of the country. The fact that half the country’s children suffer some form of malnutrition is a disaster so are the high maternal and neonatal mortality rates. These are silent emergencies.

We chronicle the daily COVID-19 death toll, but there are no headlines that say dozens of children died yesterday all over Nepal due to preventable causes. There is no one doing that daily tally, and announcing it in a press briefing.



Aerial view of the Melamchi Water Supply Project headworks is covered in mud after Tuesday's flash flood. Eight staff, including Indian and Chinese nationals, are missing.

Natural disasters are not natural. Floods by themselves do not 'wreak havoc', they do so when houses are allowed to be built along floodplains. This week's floods in Manang, Mustang, Kaski, and Sindhupalchok were not unexpected. The intensity of rain may have been beyond our control, but preparing for a flood in a high-risk zone should have been.

Sindhupalchok was hit by both the 25 April and 12 May earthquakes in 2015, which caused massive landslides. Haphazard road-building on fragile slopes increased the danger, and one of these landslides blocked the Melamchi about 3 km upstream from the headworks of the water supply project. A similar slope failure dammed the Indrawati.

When it burst, the Melamchi Khola swept into the water supply project camp, and eight people including six Indian and Chinese and two Nepali workers were missing. Downstream, two more bodies have been found and 17 are more unaccounted for. Luckily, the 26.5km tunnel bringing water to Kathmandu from Melamchi had been closed a few hours before for inspection, and this saved the project from major damage.



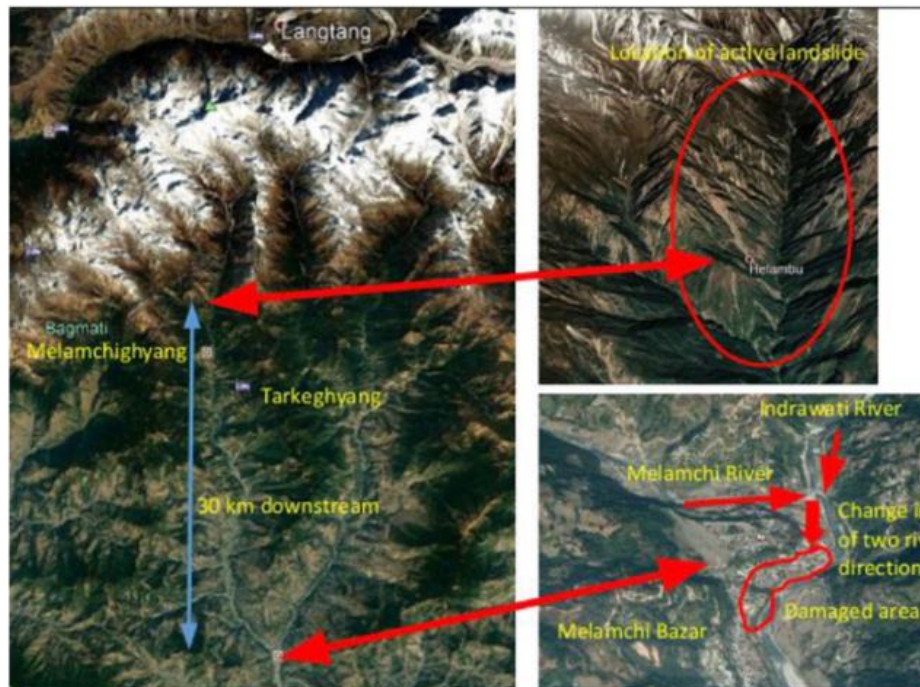
The Melamchi Khola was dammed by a landslide 3km upstream from the tunnel intake.

The torrent of liquid mud on both rivers arrived simultaneously at their confluence in Melamchi Bazar. Geographer Narendra Khanal has traced the Indrawati River blockage to a point 20km upstream. The Department of Hydrology and Meteorology monitoring station shows the Indrawati flowing at 4.7m at 4OM on 15 June, decreasing to 3m, and then shooting up to 6m at 6:45 PM.

“This is an indication that the river was blocked upstream in an area with major landslides after the 2015 earthquake, and suddenly the water broke through,” Khanal explains.

The river overflowed into Melamchi Bazar at high velocity because much of the sand and boulders that would have slowed it down had been mined by construction contractors.

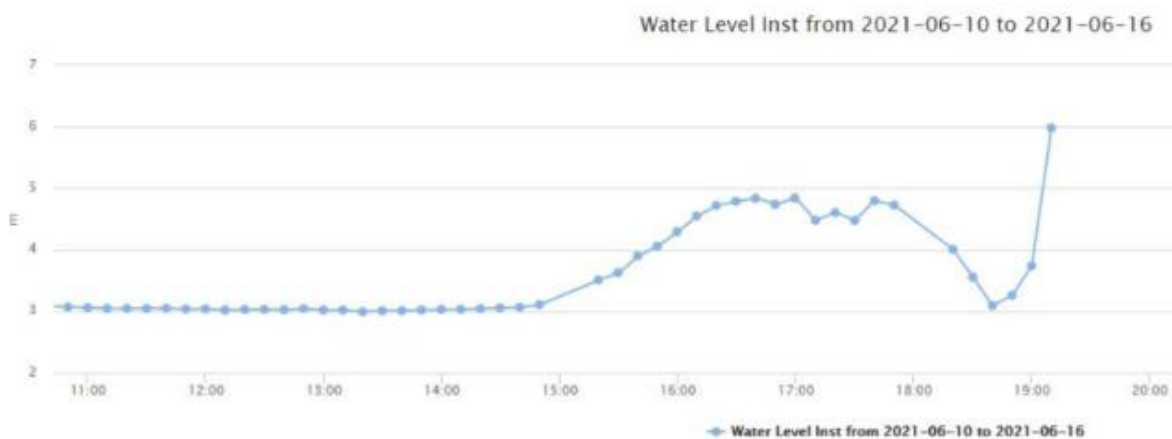
He says none of the glacial lakes in the Jugal Himal appear to have burst. Although this was fortunate, it also shows how much more catastrophic future floods can be if expanding Himalayan lakes formed by global warming burst.



Google Map showing the Melamchi and Indrawati Rivers and the location of landslide dams.

The reason for the loss of property was not the flood itself, but unplanned construction on the floodplain. Luckily, Ward 11 Chair Rudra Dulal in Melamchi Bazar had advanced information about the incoming flood and moved 100 families out of harm's way after informing police to begin evacuation.

“We received an early warning and we mobilized our team, and informed everyone. This is the only reason why we didn’t have any casualties in our community,” Dulal says.



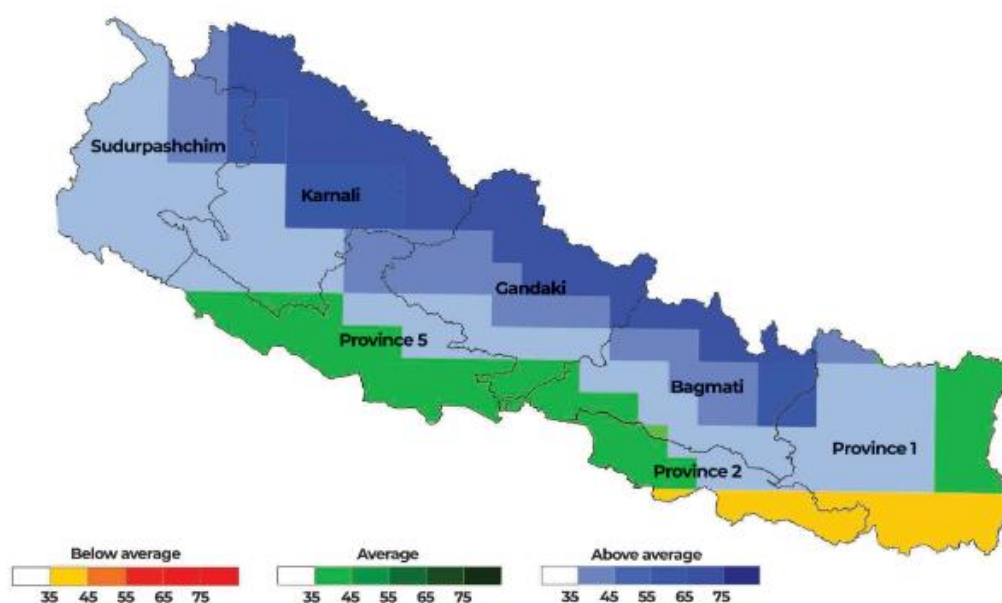
Measurements on the Indrawati on the evening of 15 June showed how the water level dropped and rose suddenly, indicating that the river was dammed upstream. Graph: DoHM

Elsewhere, at least 12 under-construction hydropower plants have been badly damaged. The worst hit was a 44MW project nearing completion on the Madi Khola in Kaski. The powerhouse and headwork were hit, while 15 excavators, tipper trucks, and other vehicles were washed away. Other functioning private and government hydropower plants in Central Nepal have either been shut down as a precaution or have been damaged.

None of this was unexpected. Anil Pokhrel of the National Disaster Risk Reduction and Management Authority (NDRRMA) warned last week that weather modelers had predicted that this year's monsoon would be above average in Nepal. What could not be forecast was how much more rain there would be, and which districts would be most vulnerable.

Indeed, areas of the Himalayan rain shadow which usually lie north of the mountains and receive scanty rainfall, were also badly affected after continuous rain for 24 hours from Monday till Tuesday afternoon.

Pokhrel of the NDRRMA had written in Nepali Times last week: "Wildfires that raged for months burnt through forest-shrub cover, undermining the ability of mountain slopes to absorb rainfall and prevent soil erosion. This could potentially result in more landslides and floods."



Weather modeling by the South Asia Climate Outlook Forum last month showed that the 2021 monsoon would be above normal in most parts of Nepal. Source: NDRRMA

Last year was the worst monsoon season in the past two decades in terms of casualties: there were 500 major landslides, nearly 300 were killed and 70 were missing. Most of the landslides were, again, in Sindhupalchok and were blamed on poor and unregulated road construction that disturbed the slopes.

A cyclonic circulation over northern India means the rains have continued along the Himalayan foothills, and it is forecast to continue through the weekend. In Melamchi Bazar, there was a fresh warning of inundation and people were evacuated on Thursday afternoon.

As the monsoon progresses, much of the flood action will shift to the Tarai. There, too, this year the floods will 'wreak havoc'. Again, the submergence will largely be due to the constriction of rivers by embankments, settlements along flood plains, perimeter walls that act as dams, and the denudation and destruction of the Chure Range.

There was a flood of recrimination last year, many commentators lamented the lack of oversight. But there has been no let-up in destructive road-building. This week, Nepal's seven provinces passed budgets in which most of their revenue is going to be derived from quarry and sand-mining contractors allowed to unsustainably exploit natural resources. The government has allowed river valleys and the fragile Chure to be mined for stone exports to India.

With politicians distracted by one-upmanship, and federalism not functioning because of micro-management by parties in Kathmandu, this season of disasters will be talked about for a while. Until next year's monsoon.