

Climate Justice and the Disaster in Nepal

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In **August 26, 2026** , **Langtang Glacier Collapsed** in Nepal near Nepal Tibet Border This is also termed as the *Nepal–Tibet Debris Avalanche and Flood*. This took place, here in Nepal starting from The Langtang Glacier in Nepal into Tibet then back to Nepal through Tibet-Nepal border. This is considered as one of the most destructive natural disasters in the region in known period of history. It was neither a standard monsoon flood, nor a typical Glacier Lake Outburst Flood (GLOF).

It is such an event which is alarming for the whole population of Tibet (China), Nepal, India, Bhutan, Pakistan, Bangladesh and Myanmar in the Himalayan Belt. It has been termed as a Himalayan Tsunami.

What Happened Really

- **An Ice Mass carrying the Rocks and Moraine Collapsed:** Around **08:37 NPT** on August 26, a massive section ($\sim 0.2 \text{ km}^2$ / 49 acres) of hanging glacier ice and underlying bedrock at an elevation of roughly 5,200 meters near the North face of **Langtang Lirung** Mountain Collapsed.
- **Plunge and Tremor:** The ice-rock mass plummeted vertically by **~1,200 meters (3,900 feet)** into the valley below. The kinetic energy of the impact was so massive that global seismometers detected a M_s **5.2 seismic signal**, which was initially mistaken for an Earthquake.
- **Friction Heat & Surge:** Friction and impact melted vast quantities of ice instantly, perhaps landed on a permafrost base, generating a hyper-concentrated slurry of water, mud, rock, and ice. The deluge sped through the **Lhende Khola** and surged into the **Bhote Koshi and Trishuli River** systems at estimated speeds approaching 150 km/h in the narrow gorges / pass of the Himalayas.

- **There was no Rain:** Local headquarters reported that there was no rain that morning. Because it was caused purely by a high-altitude Ice-slope failure, downstream warning systems installed for weather-based or GLOF monitoring failed to provide advance alerts.

Humanitarian Impact and Casualty Figures

- **Fatalities & Missing:** Official reports confirm **over 1,342 deaths and over 4,996 people are Missing** across Nepal (primarily in Rasuwa, Nuwakot and Dhading Districts (downstream along the Trishuli River basin) and **40+** deaths in Tibet (China) Gyirong County with about 541 people are Missing there, which includes 261 Foreign Nationals visiting Mount Kailash. Thousands of people remain missing, with bodies swept up to 240 km downstream into neighboring India.
- **Human Effects:** 21,465 Security Personnel from Nepal Army, Armed Police Force and Nepal Police have been deployed along with thousands of volunteers and a fleet of Helicopters for Rescue Operations. Several Experts for Tunnel Rescue have Joined from India, China and Other Countries. As per today, when I'm preparing this report, about 13,391 persons have been rescued from the effected area to safer places and about 6,083 persons are being treated in different Hospitals in Nepal.
- **Displaced & Injured:** More than 5,300 people suffered severe injuries, and entire communities along a 70–100 km stretch of the river corridor were evacuated.

Infrastructure & Economic Destruction

While the Economic destruction is yet to be finalized as several small towns and villages are totally submerged into mud and debris and around 700 containers in wheels were swept away in the border full of load coming from China to Nepal in both sides of the border. To figure out the exact damage amount, will be too early now and it can not be justified now. Therefore, I am showing the following points which can indicates the vastness of these damages:

- **Wiping Out of Border Facilities:** The **Rasuwagadhi / Gyirong Port** border crossing—a vital bilateral trade hub responsible for roughly 30% of Nepal-China land trade—was hit within minutes of the collapse and almost entirely obliterated.
- **Transportation & Towns Destroyed:** The August 26 flash flood along the Bhote Koshi and Trishuli River corridors severely impacted settlements, trade hubs, and infrastructure. The primary affected towns, villages, and key sites include:

Rasuwa District	Timure Market, Rasuwagadhi / Gyirong Port Area, Syabrubesi, Gosaikunda & Kalika Rural Municipalities, Laharepauwa & Khalte
Nuwakot District	Dhungesanghu / Dhungebazar, Trishuli Bazaar, Battar & Surrounding Settlements
Dhading District & Downstream	Galchi, Malekhu

- **Over 35 bridges and roughly 40 km of crucial highways**—including the Betrawati-Rasuwagadhi road connecting Kathmandu to China—were washed away.
- **Financial Damage:** Preliminary damage estimates in Nepal stand at **over \$3.5 billion USD** (NPR 536+ billion), representing a severe blow to the national economy.
- **Damage to Nepal's Green Energy Sector:** As Trishuli River system is one of the major river system in Nepal, a major tributary of Sapta Gandaki River system, several Hydropower energy has been generated and a few more major projects were under construction. **Hydropower & Energy Infrastructure:** Multiple critical hydroelectric installations along the Trishuli River were inundated or filled with millions of tons of mud and boulders. Dam structures, intake tunnels, and powerhouses, Sub-stations and transmission lines etc. suffered catastrophic physical damage. Some were either completed and in Testing Phase and some were or near completion. **335 MW of Electricity had been generated by 9 Projects** and 5 projects were under construction for 394 MW of electricity. So a loss of about **\$1.2 Billion USD** for the Energy Sector is directly seen.

Electricity Generating Projects Destroyed

S.N.	Name of the Project	Capacity MW	District
1	Rashuwagadhi Hydro Electricity	111	Rashuwa
2	Sanjen River	78	Rashuwa
3	Mailang Khola	5	Rashuwa
4	Langtang Khola	20	Rashuwa
5	Chilime	22	Rashuwa
6	Trishuli Hydropower	24	Nuwakot
7	Devighat Hydropower	14.1	Nuwakot
8	Upper Trishuli 3A	60	Nuwakot
9	Solar Power Plant	25	Nuwakot
		335.1 MW	

Projects under Construction Destroyed

S.N.	Name of the Project	Capacity MW	District
1	Upper Trishuli 1	216	Rashuwa
2	Rashuwa-Bhotekoshi	120	Rashuwa
3	Upper Mailung A	6.42	Rashuwa
4	Upper Trishuli 3B	37	Nuwakot
5	Middle Trishuli Ganga	15.6	Nuwakot
		395.02 MW	

Effect of Climate Change in the Himalayas

Over the last decade (2016–2026), the Himalayan region—particularly Nepal and India—has experienced at least **10 major GLOFs and high-altitude, Climate Change-driven flash floods**.

These events are driven by moraine breaches, hanging glacier/rock collapses, or compound cloudburst-avalanche failures.

Major Events in Nepal

- **July 5, 2016 – Bhote Koshi GLOF:** A breach of the Gongbu Tsho glacial lake in Tibet triggered a high-velocity outburst downstream into Nepal's Sindhupalchok district. It destroyed parts of the Araniko Highway, the Tatopani border port, and the Upper Bhote Koshi hydropower plant.

- **April 20, 2024 – Birendra Lake Outburst:** An ice-and-rock avalanche fell into Birendra Lake in Manaslu (Gorkha District), forcing a flood surge down the Budhi Gandaki River that destroyed local bridges and trails.
- **August 16, 2024 – Thame GLOF:** Overtopping and breach of the upstream Thyanbo glacial lake emptied half its volume in hours. The resulting flood destroyed over half of Thame village (Solukhumbu/Everest region), wiping out schools, homes, and local infrastructure.
- **May 2025 – Limi Valley GLOF:** A glacial lake breach in the remote Humla region inundated the Limi Valley, inflicting severe damage on agricultural land and historical footpaths.
- **August 26, 2026 – Langtang Glacier Collapse & Debris Flood:** A massive high-altitude mountain collapse involving hanging glacier ice and bedrock near the Nepal-China border sent a catastrophic debris avalanche down the Lhende and Trishuli rivers. The surge destroyed the Rasuwagadhi border infrastructure, damaged hydropower dams, and caused widespread destruction.

Major Events in India

- **The Kedarnath flood**—often referred to as the First "**Himalayan Tsunami**"—took place between **June 16 and June 17, 2013** in the northern Indian state of Uttarakhand. It stands as one of the deadliest natural disasters in modern Indian history.

Key Details of the Disaster / What Triggered it?

- **Torrential Monsoon & Cloudburst:** The region received an unprecedented surge of early monsoon rain (375% above normal) combined with cloudbursts over the high Himalayas between June 14 and June 17.
- **GLOF Event (Chorabari Lake Breach):** The relentless rainfall and rapid snowmelt caused the high-altitude **Chorabari Lake (Gandhi Sarovar)**—located just above the Kedarnath shrine—to breach its moraine dam on the morning of June 17. Millions of cubic meters of water, heavy mud, and massive boulders rushed down the Mandakini River basin.

(This is termed as First Himalayan Tsunami but the cause was not similar to the recent Langtang Disaster of Nepal)

Impact and Destruction:

- **Loss of Life:** Officially, over **5,700 to 6,000 people** were presumed dead or went missing. Unofficial estimates suggest the human toll was much higher due to the sheer density of pilgrims present for the Char Dham Yatra.
- **Widespread Destruction:** Towns along the Mandakini Valley—including Kedarnath, Rambara, and Gaurikund—were almost completely flattened or severely damaged. Roads, bridges, hotels, and infrastructure across 12 out of 13 districts in Uttarakhand were swept away, leaving over 100,000 pilgrims stranded in the mountains.

The Kedarnath Temple Miracle:

- While the surrounding township was destroyed, the ancient 8th-century **Kedarnath Temple structure remained intact**. A massive rock (now called *Bheem Shila*) floated down with the flood and lodged directly behind the main shrine, splitting the force of the debris and water around the temple rather than crushing it.
- **February 7, 2021 – Chamoli (Rishi Ganga) Disaster, Uttarakhand:** A large mass of hanging glacier ice and bedrock detached from Ronti Peak and plunged ~1,800 meters. The resulting flash flood of mud, ice, and rock roared down the Rishiganga and Dhauliganga rivers, destroying the Rishiganga power plant, severely damaging the Tapovan Vishnugad project, and killing nearly 200 people.
- **April 23, 2021 – Sumna/Niti Valley Outburst, Uttarakhand:** A localized burst of a high-altitude pocket lake combined with a severe snowstorm caused sudden flash flooding near Sumna along the India-China border, leading to worker casualties at a construction camp.
- **October 4, 2023 – South Lhonak Lake GLOF, Sikkim:** A rock avalanche into South Lhonak Lake triggered a moraine dam rupture. Over 50 million cubic meters of water flooded into the Teesta River basin, washing away the 1,200 MW Teesta III

- hydroelectric dam, destroying military camps, destroying bridges, and killing over 100 people.

Broader Himalayan Region (Bhutan & Tibet)

- **June 20, 2019 – Lemthang Tsho GLOF, Bhutan:** A breach of the Lemthang Tsho glacial lake in the Mochhu basin sent an outburst flood downstream, destroying bridges and trails in northern Bhutan.
- **June 26, 2020 – Jinru Co GLOF, Tibet (China):** The Jinru Co glacial lake burst in the Tibetan Himalayas, releasing over 30 million cubic meters of water and triggering major downstream flooding in regional river channels.

The Cause: While the scientists and geologists all over the world are trying to find out how it has happened, everyone has agreed to the main trigger fact-the emitted carbon-di-oxide in the environment has caused the increase of temperature and the increase of temperature has caused the melting of ice.

Traditional GLOFs (moraine failure due to high water levels) are increasingly accompanied by **the impact of several events**— basically the **change in climatic condition**. The temperature is increased due to climate change / the CO₂ emission in the atmosphere and what we call global warming. So instead of snowfall there is rain in certain areas in the Himalayas. This rain water, then melts the snow and the age-old permafrost is melted from inside and the bond is very weak. Therefore if a falling ice/rock slides into such lakes or at the slope of the snow-capped mountain, it can instantly displace millions of tons of water mixed with the loose permafrost.

- **Heightened Risk:** Glacial lakes across the Himalayas continue to expand in volume and surface area due to rising mountain temperatures, increasing overall exposure for downstream communities and hydropower infrastructure.
- **Ice / Himalayan Face Fall :** The risk is now experienced as of the recent Langtang incident that such Ice Fall can be there in the near future as more and more places in the Himalayas are experiencing less snowfall thus, less and less ice and sometimes rainfall which is because of the increase in climate.

- The Glaciers underneath are also widening because of the gradually melting permafrost. If the Ice / Mountain Face falls in those lakes, such events may occur in many places.

Who is to be blamed and Who needs to compensate:

The top 10 emitters alone account for nearly 75% of total global emissions.

Top Global CO₂ Emitting Countries

Rank	Country / Region	Share of Global Emissions (%)
1	China	~32% – 34%
2	United States	~12%
3	India	~7.6%
4	<i>European Union (EU-27)</i>	<i>6.0% to 6.5%</i>
5	Russia	~5.3%
6	Japan	~2.4%
7	Iran	~2.0%
8	Indonesia	~1.7%
9	Saudi Arabia	~1.6%
10	Canada	~1.5%

- **The Big Five:** China , The US, India, The EU and Russia are the major carbon emitting countries.
- **The Big Three:** China, the US, and India collectively produce over half of all global fossil carbon emissions.

- **Per Capita Differences:** While China and India have high total emissions due to large populations and heavy manufacturing, countries like the United States, Canada, Saudi Arabia, and Australia rank much higher when looking at emissions *per person*.

According to data from the European Commission's Emissions Database for Global Atmospheric Research (EDGAR), key metrics for total annual fossil CO₂ emissions and per capita emissions compare as follows:

Emissions Profile: China, USA, India, and the EU (EU-27)

Country / Region	Annual Fossil CO ₂ Emissions	Share of Global Emissions (%)	Per Capita CO ₂ Emissions
China	~13.1 Billion Metric Tons	~33.1%	~9.1 - 9.2 Tons / person
United States	~4.6 Billion Metric Tons	~11.7%	~13.6 - 13.8 Tons / person
India	~3.1 Billion Metric Tons	~8.0%	~2.2 Tons / person
European Union (EU-27)	~2.5 Billion Metric Tons	~6.0%	~5.6 - 5.7 Tons / person

Contextual Insights

- **Total vs. Individual Impact:** While China produces over a third of global emissions due to its massive industrial base and population, the average American generates around **1.5 times** more CO₂ per year than an average citizen in China, and over **6 times** as much as an average citizen in India.
- **EU Trends:** The EU-27's overall share of global emissions has steadily declined over recent years due to significant reductions in coal-fired power generation and rapid expansion of renewable energy sources.

Where Nepal Stands ?

Nepal accounts for approximately **0.04%** of global fossil carbon dioxide (CO₂) emissions. Eventough we are the Victim of this event , time and again. And also are vulnerable to many such events in the future.

When evaluating overall greenhouse gas emissions (which include methane and nitrous oxide, predominantly from agriculture and land use alongside fossil fuels), Nepal's share is roughly **0.08%** of the global total.

Key figures regarding Nepal's carbon footprint:

- **Annual Fossil CO₂ Emissions:** ~15.9 million metric tons
- **Per Capita CO₂ Emissions:** ~0.5 tons per person per year (compared to the global average of ~4.7 tons per person)
- **Primary Sources:** Transportation, industrial combustion, biomass/building energy, and brick manufacturing.
- Hydroelectric power dominance keeps the grid's operational emissions low.

Was it not seen by experts or is this ignored by all?

No. Time and again this issue has been raised. The Experts in Nepal as well as outside have been saying this. But most of the research has been in the field of GLOF and Torrential Rain effects / mud slides. But the study of Ice/Fall or Mountain Fall is to be done from a new angle.

UN Secretary General, António Guterres, during his landmark visit to the Everest region in Nepal on **October 30, 2023**, delivered a speech calling for global action on climate change with the following remarks:

- **"Stop the Madness":** Standing near Mount Everest, Guterres urged world leaders to "stop the madness" of climate change and accelerate the transition away from fossil fuels.



- **"Rooftops of the World are Caving In":** He warned that Himalayan glaciers are melting at alarming rates—65% faster over the previous decade than the decade before—putting communities and water security at risk of extinction.
- **Threat to Global Water Resources:** He emphasized that Himalayan glaciers act as critical water towers feeding major river systems (such as the Ganges, Indus, and Brahmaputra) that sustain nearly 2 billion people, warning of catastrophe if river flows decline.
- **Call for Climate Justice:** He highlighted that vulnerable nations like Nepal contribute virtually nothing to global carbon emissions yet face disproportionate impacts, calling on developed, high-emitting nations to limit global warming to 1.5°C and provide climate adaptation funding.

We cannot say that such things were not predicted, but where and how these disasters happen, we cannot say now. Therefore, research needs to be done in the Himalayas and the amount of ice it receives and melts so that it may be predicted earlier. A very accurate cross-border alarming mechanism needs to be developed, in order to save people. The immediate relocation of people / towns and villages from the river belt to upper areas needs to be done with a scientific basis. So many things to do.... Nepal is eagerly waiting for the UN and Other Countries how they are going to move forward

Climate Justice?

It is time that such low carbon emitting countries like Nepal, who is developing its infrastructure focusing in Clean & Green renewable energy, is becoming the major victim of Human-Triggered Natural Disasters, triggered by un-environment friendly development of those greedy countries. There should be a debate and a way-out mechanism for justice. The practical **Climate Justice!**

Steering Group for Climate Justice in Friends of Nature (International) has been discussing about Climate issues, and Climate Justice for a quite long time. I also participate in such discussions, but I do not see any outcome from this right now. What can be done in the future? and how Nepal can benefit from this event and from the discussions further?