



INTERNATIONAL CAMPAIGN FOR TIBET

New UN report warns of dire risks from Tibet climate change

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After largely overlooking Tibet in its past reports, the United Nations' Intergovernmental Panel on Climate Change (IPCC) has now raised the alarm on the state of the environment of the Tibetan plateau, warning of serious sequences.

The IPCC *Special Report on the Ocean and Cryosphere in a Changing Climate* was released on Sept. 25, 2019, just as world leaders met at the UN Climate Action Summit in New York.

The report says that even if carbon emissions are dramatically and rapidly cut and succeed in limiting global warming to 1.5 degree C, 36 percent of glaciers along the Hindu Kush and the Himalayan range will be gone by the year 2100. If emissions are not cut, the loss will increase to two-thirds.¹

The dangers and impacts are compounded by China's policies in Tibet, which seal off the Tibetan Plateau from regional cooperation and exclude and marginalize Tibetans as stewards of their own fragile high-altitude ecosystem. Tibet, a historically independent country, has been brutally occupied by China for the past 60 years.

The IPCC report, produced by [104 scientists from 36 countries](#) over a three-year period, makes it clear that effective adaptation efforts depend on regional cooperation, reduced geographic barriers and the use of indigenous and local knowledge.

Despite the fragility of the high-altitude ecosystem and the stark threats spelled out by the IPCC, China has intensified infrastructure construction across Tibet to further open up the landscape and extract Tibet's natural resources. Such projects include a network of strategic rail routes and major damming and hydropower projects, the effects of which are likely to be irreversible.

The IPCC is an influential UN body established by the UN Environment Program (UNEP) and the World Meteorological Organization (WMO) to review the science related to climate change and its impacts and to provide response options for policymakers and world leaders.

At a press conference on Sept. 25, the IPCC revealed its findings that sea levels are rising at an ever-faster rate as ice and snow shrink, and oceans are getting more acidic and losing oxygen. The main findings of the report relating to Tibet are:

¹ IPCC, 2019, 'Special Report on the Ocean and Cryosphere in a Changing Climate', <https://www.ipcc.ch/srocc/download-report/>, page 149 (chapter 2, page 18). The IPCC approved and accepted the Special Report at its 51st Session held on 20 – 23 September 2019. The approved Summary for Policymakers (SPM) was presented at a press conference on 25 September 2019.

- The Tibetan Plateau is among the high-altitude regions on Earth now warming at nearly three times the rate of the rest of the planet. Its average rate of warming of 0.3 percent C outpaces the global warming rate of 0.2 ± 0.1 C per decade.² Likely climate change scenarios referenced in the report suggest regional temperature increases between 3.5 and 6 degree Celsius by the year 2100.
- A quarter of ice on the earth's Third Pole—the term used by scientists to refer to the Tibetan Plateau—has been lost since 1970 and up to two-thirds of the region's remaining glaciers are on track to disappear by the end of the century. The Nyenchen Tanglha mountain range in Tibet, which has its highest point to the northwest of Lhasa,³ is singled out as being particularly adversely affected.
- Over the next few decades, the melting could accelerate due to warming and increased air pollution from a growing population on the Indo-Gangetic Plain, one of the world's most polluted regions. The dirty air makes the glacier situation worse by depositing black carbon and dust on the ice, hastening the thaw.
- Severe degradation and thawing of permafrost in Tibet during the past few decades, projected to continue, have contributed to “changing the seasonal activities, abundance and distribution of ecologically, culturally, and economically important plant and animal species, ecological disturbances, and ecosystem functioning,” according to the IPCC.⁴ IPCC scientists also state that subsidence of the landscape due to thawing permafrost has already had negative impacts, which are predicted to worsen, on the integrity of transportation infrastructure: “On the Tibet Plateau, deformation or damage has been found on roads (Yu et al., 2013; Chai et al., 2018), power transmission infrastructure (Guo et al., 2016) and around an oil pipeline (Yu et al., 2016).”⁵
- Extreme precipitation is likely to increase across the Himalayan range and Tibetan Plateau. The IPCC report states: “Across the Himalayan-Tibetan Plateau mountains, the frequency and intensity of extreme rainfall events are projected to increase throughout the 21st century, particularly during the summer monsoon.”⁶ This would mean that floods will become more frequent and severe in the mountainous and downstream areas.
- “Disaster risks” to human settlements and livelihood options in high mountain areas are expected to increase according to the IPCC, “due to future changes in hazards such as floods, fires, landslides, avalanches, unreliable ice and snow conditions, and increased exposure of people and infrastructure.”⁷
- The IPCC report confirmed toxic metals polluting the water supply, stating that: “Of the heavy metals, mercury is of particular concern and an estimated 2.5 tonnes has been released by

² Ibid., IPCC report, 2019, page 140 (chapter 2, page 9). The report states: “Mountain surface air temperature observations in Western North America, European Alps, High Mountain Asia show warming over recent decades at an average rate of 0.3°C per decade, with a likely range of ± 0.2 °C, thereby outpacing the global warming rate 0.2 ± 0.1 °C per decade, (IPCC, 2018). Underlying data from global and regional studies are compiled in Table SM2.2, and Figure 2.2 provides a synthesis on mountain warming trends, mostly based on studies using in-situ observations. Local warming rates depend on the season (high confidence). For example, in the European Alps, warming has been found to be more pronounced in summer and spring (Auer et al., 2007; Ceppi et al., 2012), while on the Tibetan Plateau warming is stronger in winter (Liu et al., 2009; You et al., 2010).”

³ The IPCC report uses the PRC's preferred English transliteration of the Tibetan name, rendered as Nyainqentanglha.. Ibid., IPCC report, 2019, page 146 (chapter 2, page 15).

⁴ Ibid., IPCC report, 2019, and IPCC, 2019, ‘Summary for Policymakers’ in ‘Special Report on the Ocean and Cryosphere in a Changing Climate.’ https://report.ipcc.ch/srocc/pdf/SROCC_SPM_Approved.pdf.

⁵ According to the IPCC report, *Op. Cit.*, “Scenario simulations for the Tibet Plateau until 2100 estimate permafrost area to be strongly reduced, for example by 22–64% for RCP2.6 and RCP8.5 and a spatial resolution of 0.5° (Lu et al., 2017),” page 152 (chapter 2, page 21).

⁶ The IPCC report suggests as a result a transition toward more episodic and intense monsoonal precipitation, especially in the easternmost part of the Himalayan chain.

⁷ *Op. cit.* IPCC, 2019, ‘Summary for Policymakers’, page 30.

glaciers to downstream ecosystems across the Tibetan Plateau over the last 40 years.”⁸ The IPCC states that “The release of toxic contaminants, particularly where glacial melt waters are used for irrigation and drinking water in the Himalayas and the Andes, is potentially harmful to human health both now and in the future.”⁹

- Intensive and increased “glacier surge”¹⁰ activity due to warming has been noticed in a region of western Tibet, along with a higher risk of complete glacier collapses. The IPCC shared an example of twin glacier collapses with nine fatalities in the Aru range in Tibet in 2016.¹¹
- Increased glacier meltwater has caused lakes on the Tibetan Plateau to increase in size, covering pasture areas and leading pastoralists to alter their patterns of seasonal movement, according to the IPCC.¹²

Referring to the impacts downstream, one of the lead authors of the report, Anjal Prakash, said: “Snow and glacier melt from high mountains helps to sustain the rivers that deliver water resources to downstream populations. Due to global warming and its implications in the water resources in the Himalayan Hindu Kush region, three sectors would be directly affected—water for domestic use, agriculture and hydroelectricity.”¹³

Despite the high risks, and the global importance of the Tibetan Plateau, the Chinese government has intensified dam-building accompanied by massive road and infrastructure construction in areas that were once among the least disturbed habitats on earth. A major goal of China’s Five-Year Plan of 2016 to 2020 has been to intensify the buildup of dams on all of Tibet’s major rivers, with cascading dam construction on wild mountain rivers involving powerful state-owned Chinese consortiums.¹⁴

The IPCC report, which was approved on Sept. 24 by 195 member countries, will be a crucial scientific input at the 25th Conference of Parties at the UN Framework Convention on Climate Change (UNFCCC) in Chile in December.

The IPCC refers to the importance of indigenous knowledge in terms of mitigation of impacts of climate change, stating: “Since the mid-20th century, the shrinking cryosphere in the Arctic and high-mountain areas has led to predominantly negative impacts on food security, water resources, water quality, livelihoods, health and well-being, infrastructure, transportation, tourism and recreation, as well as culture of human societies, particularly for indigenous peoples [...]. Costs and benefits have

⁸ Op. cit., IPCC report, 2019, page 161 (chapter 2, page 30).

⁹ Gaia Vince explains in an article in The Observer: “Glaciers are time capsules, built snowflake by snowflake from the skies of the past and, as they melt, they deliver back into circulation the constituents of that archived air. Dangerous pesticides such as DDT (widely used for three decades before being banned in 1972) and perfluoroalkyl acids are now being washed downstream in meltwater and accumulating in sediments and in the food chain.” The Observer, ‘The world has a third pole – and it’s melting quickly’, September 15, 2019, <https://www.theguardian.com/environment/2019/sep/15/tibetan-plateau-glacier-melt-ipcc-report-third-pole>.

¹⁰ Glaciers surge when water accumulates at the base of the ice. Water can accumulate at the bed of glaciers from several causes. A large thickening from snow accumulation can lower the pressure melting point of the ice creating meltwater. Warmer ice can move more easily and that friction in turn creates more warming.

¹¹ Op. Cit., IPCC report, 2019, page 169 (chapter 2, page 38). According to scientists, shared factors—such as short-term weather conditions, longer-term climate change, and the underlying geological or topographic environment—may have played a role in the collapse of these two glaciers. See NASA report, ‘A SECOND MASSIVE ICE AVALANCHE IN TIBET’, [HTTPS://VISIBLEEARTH.NASA.GOV/VIEW.PHP?ID=88953](https://visibleearth.nasa.gov/view.php?id=88953)

¹² (Nyima and Hopping, 2019).

¹³ Press Trust of India, September 25, 2019, ‘Hindu Kush at risk of losing over 60% glaciers by 2100: Green group’, https://www.business-standard.com/article/pti-stories/64-glaciers-in-hindu-kush-himalayan-region-may-be-lost-by-2100-ipcc-report-119092501137_1.html.

¹⁴ International Campaign for Tibet report, ‘Damming Tibet’s Rivers’, May 30, 2019, <https://savetibet.org/damming-tibets-rivers-new-threats-to-tibetan-area-under-unesco-protection/>.

been unequally distributed across populations and regions. Adaptation efforts have benefited from the inclusion of Indigenous knowledge and local knowledge.”¹⁵

In direct contrast to this approach, the Chinese government excludes Tibetan expertise from decision-making and blames Tibetan nomads for the degradation of Tibet’s vast grasslands, an approach that is increasingly contested even within the People’s Republic of China. The IPCC and experts around the world uphold a scientific consensus that mass removal of pastoralists from their land is extremely damaging because indigenous stewardship and herd mobility are essential to both the health of rangelands and climate change mitigation.¹⁶

There are also profound implications for regional stability. “Upstream-downstream conflict over extractions, dam-building and diversions has so far largely been averted through water-sharing treaties, but as the climate becomes less predictable and scarcity increases, the risk of unrest within—let alone between—nations grows,” wrote Gaia Vince in an Observer report.¹⁷

Quote:

Matteo Mecacci, president of the International Campaign for Tibet:

“As a storehouse of freshwater and the source of the earth’s eight largest river systems, the Tibetan Plateau is a critical resource for the world’s 10 most densely populated nations surrounding it. This critical report sounds the alarm—Tibet’s climate emergency matters to the entire world, and must no longer be ignored.

“The last IPCC report on climate change and the land highlighted how Chinese policies in Tibet have increased the vulnerability of Tibetan pastoralists to climate change. This latest report on the cryosphere highlights the risks now facing not just communities high on the plateau but the millions living downstream. This is a warning that must be heeded before it is too late to protect against future shocks. Collaboration among international organizations, governments, civil society stakeholders and, importantly, Tibetan pastoralists in research and responses to changes in the Tibetan Plateau’s ecosystem, water resources and policies is urgently needed. Such an approach must be developed to ensure durable approaches to adapting to and mitigating climate change.”

¹⁵ Op. Cit., IPCC, 2019, ‘Summary for Policymakers’ in ‘Special Report on the Ocean and Cryosphere in a Changing Climate’, section A7.

¹⁶ International Campaign for Tibet analysis, ‘Chinese policies increase risk of climate emergency for Tibetan nomads, UN panel says’, August 12, 2019, <https://savetibet.org/chinese-policies-increase-risk-of-climate-emergency-for-tibetan-nomads-un-panel-says/>.

¹⁷ Op. Cit., The Observer, ‘The world has a third pole – and it’s melting quickly’, September 15, 2019.