



Tibet's Climate Crisis: A Frontline Perspective

Tibet is on the frontline of the climate crisis. The Tibetan Plateau is a fragile and strategically critical ecosystem that is extremely sensitive to climate change. As the source of Asia's major river systems and home to the largest volume of ice outside the poles, changes in the Tibetan Plateau ecosystem significantly impact regional and global weather patterns, river systems and biodiversity.

Tibet is warming 2-4 times faster than the global average. This has accelerated glacial and permafrost melt and exacerbated desertification. Climate change in Tibet is threatening the livelihood of at least 1.4 billion people, as well as the region's rich biodiversity, weakening the earth's resilience to environmental stress.

Given Tibet's importance in the regional climate, it is clear that new approaches are needed in response to climate change. A proportionate response that matches the challenge of climate change in scale, character and complexity is urgently required. Tibetans and Tibet advocates from around the world have come together at COP 26 to make the following recommendations for climate change policy:

1. Recognise the strategic and ecological importance of Tibet and the wider Tibetan Plateau, acknowledging its unique biodiversity, its impact on regional weather patterns and its place at the heart of food and water security in Asia.
2. Improve access and transparency in scientific research on climate change, with particular focus on encouraging the inclusion of Tibetan experts in collaborative work.
3. Adopt a rights-based approach which empowers and engages frontline communities and respects the value of traditional knowledge.

Tibet's environment

Encircled by snow covered mountains, and with an average altitude of 4,000 meters above sea level, the Tibetan Plateau rises in the heart of Asia, spanning an area of 2.5 million square kilometres. This high-altitude massif containing snow, glaciers and permanently frozen soil (permafrost) is the largest repository of frozen freshwater outside the North and South poles. Consequently, Tibet is often referred to as the "Third Pole".

It is also described as the "Water Tower of Asia", given that eight of Asia's major river systems originate within Tibet. Some 1.4 billion people live within the watersheds of these rivers, depending upon them directly for freshwater supplies, while close to 4 billion people are fed by agriculture and industry dependent upon those supplies – approximately half the world's present population. Tibet also plays a significant role in the regional climate system - shaping hydrological and atmospheric dynamics, influencing the start of the Asian summer monsoon and the dynamics of the easterly and westerly wind streams in the northern hemisphere.¹

The fragility of Tibet's environment matters not only for the climate system, but also for the region's rich biodiversity. Tibet is home to at least four types of ecosystems and sits at the intersection of three biodiversity hotspots – defined as the earth's most biologically rich, but threatened, terrestrial regions. Understanding the changes in Tibet helps to predict global atmospheric and hydrological changes.²

What are the effects of climate warming?

Current predictions report 36% of the glaciers along the Hindu Kush and Himalayan range will be gone by 2100, even if global warming is limited to 1.5 °C. If emissions are not cut, the loss increases to two thirds.³ Such changes are expected to increase the frequency and intensity of extreme weather conditions such as snowstorms, floods, and droughts.⁴ Warmer temperatures will also lead to increased permafrost subsidence, which can cause landslides and avalanches. In

¹ Yang, H., Shen, X., Yao J., and Wen, Q., 1 March 2020, *Portraying the Impact of the Tibetan Plateau on Global Climate*, Journal for Climate, <https://journals.ametsoc.org/view/journals/clim/33/9/jcli-d-18-0734.1.xml#container-43616-item-43640>.

² Bollasina, M. and Benedict, S., *The Role of the Himalayas and the Tibetan Plateau within the Asian Monsoon System*, Bulletin of the American Meteorological Society, Vol 85, Issue 7, 2004, https://journals.ametsoc.org/view/journals/bams/85/7/bams-85-7-1001.xml?tab_body=pdf.

³ IPCC, 2019, 'Special Report on the Ocean and Cryosphere in a Changing Climate', <https://www.ipcc.ch/srocc/download-report/>, p. 149 (chapter 2, p. 18).

⁴ The Hindu: Business Line, 'Global warming reaches Tibet; extreme weather on Plateau', March 23, 2014,

<https://www.thehindubusinessline.com/news/world/Global-warming-reaches-Tibet-extreme-weather-on-Plateau/article20740057.ece>.

the short-term, glacial lakes will expand, with water run-off in the off-season slowly declining in the long-run. The loss of permafrost accelerates desertification and the loss of a major carbon sink.

The thawing of permafrost not only leads to the decomposition of previously frozen organic soil materials, but also releases tons of methane into the atmosphere and reinforces the overall warming of the atmosphere through the permafrost feedback loop. The shift in the composition of different layers of the soil also causes the water to drop below the reach of the roots of plants, alters local ecosystems and disrupts the water cycle and food security of the wider region. The massive infrastructure development of roads, railways and urban enclaves are, therefore, also at risk of collapsing, a catastrophe which has already been observed in permafrost regions of Siberia.

Tibet's occupation is at the root of environmental mismanagement

Many of the environmental challenges facing Tibet have been caused and/or exacerbated by the political disempowerment of Tibetans, who have been under the occupied rule of the People's Republic of China (PRC) since 1949/50. Prior to the Chinese invasion, Tibet's environment enjoyed the protection of natural geographic barriers and the majority of Tibetans maintained a sustainable lifestyle based on farming and nomadic pastoralism.

Since the 1980s, policies such as grassland privatisation and fencing, the resettlement of at least 1.8 million nomads, urbanisation and in-migration combined with increased mining and infrastructure projects, have altered the ecosystem and exacerbated the effects of climate change. The combination of global warming and domestic policies have increased desertification, which has not only resulted in the loss of a major carbon sink, but also reduced local biodiversity. These policies have been rolled out under the guise of economic development or environmental conservation with limited consultation and to the serious detriment of local Tibetans and the environment.

What needs to be done?

Recognise the strategic and ecological importance of Tibet and the Tibetan Plateau; acknowledging its unique biodiversity, its impact on regional weather patterns and its place at the heart of food and water security in Asia.

Glacier meltdown across Tibet is disrupting downstream water supplies, threatening the sustainable livelihoods of Tibetan nomads, and putting at risk more than one billion downstream peoples and communities in south and east Asia. The broader effects will impact approximately half the world's population. It requires a global response.

Improve access and transparency in scientific research on climate change, with particular focus on encouraging the inclusion of Tibetan experts in collaborative work.

Very little is known about the Tibetan Plateau's unique ecosystem, its dynamics, and the processes affecting it. Due to geographic and political barriers to access, the region is known as a "white spot" – an area for which there are "little to no data". This poses serious risks for future generations and downstream countries as it limits the development of predictions and policies to adapt to anticipated changes. All stakeholders at COP26 should advocate for the opening up of environmentally important regions, such as the Tibetan Plateau, for scientific research and international collaboration. Tibetan experts must be involved at all levels of local and international research collaborations and political decision making.

Adopt a rights-based approach which empowers and engages frontline communities and respects the value of traditional knowledge.

A rights-based approach empowers those who are impacted by the effects of environmental degradation to improve environmental outcomes and supports state actors to fulfil their obligations with respect to the environment. It draws on international human rights standards and laws and is guided by the principles of equality and non-discrimination, participation and empowerment, and transparency and accountability.

A rights-based approach is sustainable, as it empowers local communities to carry out environmental monitoring and management roles that they would traditionally fill. In the case of Tibetans, their local knowledge, practices (such as nomadic, seasonal and communal grazing) and traditional beliefs (rooted in Bön and Buddhist beliefs) make them ideal stewards to protect and improve the Tibetan Plateau ecosystem and build its resilience to climate change. Tibetans' indigenous knowledge system, grounded in their culture, language and religion, must form the baseline indicators of human development, conservation and sustainability criteria.