AUSTRALIA TIBET COUNCIL
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TIBET'S ENVIRONMENT

The Big Melt

While climate change impacts us all, it is hitting some regions and communities harder than others. Communities who have contributed the least to global greenhouse emissions – such as Tibet's nomads – are often among the most vulnerable.

Like the Arctic and the Pacific Island nations, Tibet is on the frontline of global climate change. The impact of rising temperatures, changing precipitation patterns, melting glaciers and extreme weather are being felt directly by Tibetans and impacting the wildlife and ecosystems of Tibet. The Tibetan Plateau is a sensitive ecological hotspot and likely to undergo greater changes than other regions.

However, as the headwater of Asia's major rivers and with its important role in global climate and weather systems, these changes have ramifications far beyond Tibet's borders and threaten the fresh water supply and food security of billions.

As the international community comes together to tackle the twin challenges of poverty alleviation and global climate change, it's time to recognise Tibet and Tibetans as a part of the solution.

The Tibetan Plateau as a whole is warming at least twice as fast as the global average. Temperatures have risen 0.35°C per decade since the 1960s which is more than twice the global average increase. Changtang and Qaidam Basin regions have warmed even more by 0.4°C. Moreover, higher altitude regions of the Tibetan Plateau are warming faster than lower regions, meaning glaciers are losing ice even at high elevations.

The rapid warming has caused Tibet's glaciers to reduce in area by 15% over the last three decades, from 53,000km^2 to 45,000km^2. Of equal concern, the thickness of glacial ice is reducing with the largest glacier losing 13 metres of ice depth. As annual runoff from glaciers has increased (from 61.5km^3 to 79.5km^3 over the same period), so too has the size of Tibet's lakes. This has inundated some pastures and increased the risk of floods and landslides.

Without climate action glacial lakes will continue to burst causing flash floods and loss of life, as happened on the Aru Range in 2016 when twin glacial collapses occurred, and 9 lives were lost. These collapses have been attributed in part to climate change.

Rivers that begin their life on the Tibet Plateau, including the Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Mekong, Yangtze and Yellow, support about 1.4 billion people. The melting of Tibet's glaciers significantly affects the flow in these rivers. While the overall hydrological cycle is dominated by the monsoon systems, meltwater from snow and glaciers provides an important source of flow pre and post the monsoon seasons. In the short term, glacial melt will increase river flow. While in the longer term there will be a large impact on water availability during the dry seasons. The melting of Tibet's glaciers is also pumping increased amounts of heavy metals into the great rivers of Asia, with 2.5 tonnes of mercury alone released over the last 40 years.

Glaciers in Tibet have shrunk by 15% in the last 30 years ('Glacier' by James Wheeler).

The last two decades have seen a major increase in large scale mining in Tibet. Evidence indicates that this affects nearby glaciers by altering glacier dynamics, structure, and degradation. China has plans to further expand the exploitation of Tibet's resources with the creation of large mines,

some in cases in areas that have been cleared of nomadic herders, compounding the already negative environmental impacts of mining with the negative impacts of the removal of the traditional environmental managers, the nomads.

In 2015, the international community adopted the Paris Agreement – a comprehensive framework for tackling climate change and the culmination of over two decades of international negotiations. But while the agreement commits us to limiting the global average temperature rise to "well below 2°C" and to aiming towards a limit of 1.5°C, the aggregate of current national commitments towards reducing greenhouse emissions have us on a path to around 2.7°C of warming and potentially catastrophic disruptions. Mounting evidence suggests that even a rise of 2°C will push many vulnerable communities and ecosystems beyond their ability to adapt.

The impacts of climate change on the Tibetan Plateau and their knock-on effects for the region not only stand as an unequivocal call for greater action to reduce greenhouse emissions. The Tibetan experience also provides many other important lessons on how we could and should be tackling climate change. Reducing emissions and improving lives can, and indeed must, go hand in hand.

The forced removal of Tibet's nomads, has unnecessarily harmed both the environment of Tibet and wellbeing of Tibetans. The policy is all the more heart-aching given the positive role that Tibetan nomads could be playing in China's response to climate change, and, conversely, the benefits that could theoretically be reaped by nomadic communities if China were willing to recognise them as part of a solution.

As the world struggles to curb greenhouse emissions, the ability to sequester carbon dioxide and other greenhouse gases will become an increasingly valuable service. Maintaining Tibet's grasslands is essential to tackling global climate change. It is possible to conceive of Tibetan nomads supplementing their traditional lifestyles by receiving payments for capturing and storing carbon, though either global carbon markets or China's national emissions trading scheme, much as indigenous communities in Australia can be paid under the country's Emissions Reduction Fund for reducing greenhouse emissions by using traditional savannah fire management.

From Mongolia to the Sahel, nomadic herding is increasingly recognised by governments and development agencies not only as an important strategy for the sustainable use of grasslands, but equally as a tool for both climate change mitigation (reducing greenhouse gases) and adaptation (building resilience to impacts that can no longer be avoided). As one researcher on the effects on climate change on nomads notes:

> *"The most important way to increase resilience to climate change is to maintain and facilitate the application of nomads' traditional strategies to deal with climate risk and especially drought, such as transboundary mobility and pasture reserves for emergency times."*

Nonetheless, a growing body of evidence challenging both the ecological and social wisdom of China's policies — from further degradation of the grasslands to poverty and unemployment among resettled nomads — has failed to curb plans to settle all of Tibet's remaining nomads.

2021 is a defining year for international action to address climate change, commitments for carbon reductions by 2030 under the Paris agreement need to urgently be updated. Many countries, including Australia's closest allies, have committed to increased action by 2030 to reduce carbon emissions by at least 50%, Australia must step up and match these efforts. It must also scale up its support of poorer nations to take action on climate change.

The Paris Agreement states all actions to address climate change must respect human rights, the rights of indigenous peoples, the rights of peoples in vulnerable situations, and the right to development, as well as promoting gender equality and empowerment of women. It is vital that these principles are adhered to. As stated by UN human rights experts on World Environment Day in 2015:

> *"Bringing a human rights perspective to climate change not only clarifies what is at stake; it also helps to ensure that responses are coherent, effective and responsive to the concerns of those most affected."*

Tackling climate change, along with any challenge, should begin with recognising existing strengths and opportunities. Will China learn this vital lesson before it is too late?

Read our full report 'Tibet: An Environmental Challenge' at
https://www.atc.org.au/report-tibet-environmental-challenge/