



‘BUILDING ON TOFU’: MEDOG ANOTHER PROJECT DAMMING TIBET’S ENVIRONMENT

by
John Jones

Everything about the Medog Hydropower Station in Tibet sounds like a monster. A cost of 1 trillion yuan (\$137 billion). The capacity to supply energy to 300 million people. The ability to annually generate 300 billion kilowatt-hours of power, three times the energy of the Three Gorges Dam, currently the largest hydropower dam in the world. An engineering behemoth in the world’s deepest canyon, harnessing the power of the mighty Yarlung Tsangpo river as it flows from the Tibetan glaciers, around the Great Bend in Tibet’s Medog County and then rushes down a 50-kilometre stretch, during which it drops 2,000 metres.

Beyond the Show of Statistics

It certainly captured the imagination of international media in late December, [following a triumphant announcement](#) in Chinese state media outlet Xinhua. The official report trumpeted the effects that the dam will have for Tibet and beyond, including rapid growth of industry, the creation of new jobs, and improved electricity infrastructure.

The project will also “strengthen the synergy of development between Xizang and other regions, thus enhancing the sense of gain, happiness and security for people of all ethnic groups in Xizang,” claimed Xinhua, deploying the term [Xizang](#), a Chinese name for Tibet that is rejected by Tibetans but which Beijing is promoting to an international audience. Under Chinese Communist Party rule, everything from Tibet’s land to Tibet’s name is targeted for upheaval as Beijing presses on with its strategy of incorporating Tibet into the People’s Republic of China.

International media quickly picked up the story, [reporting on the formidable logistics](#) of a project that would reportedly see a tunnel drilled through the Namcha Barwa mountain to divert the

river, and the threats that the dam would pose to nations downstream including Bangladesh and India. Both nations have already suffered the consequences of damming on the Yarlung Tsangpo, which becomes the Brahmaputra as it crosses into India. If it is hard to imagine the sheer force of Yarlung Tsangpo where it bends, the Tibetan name for that mountain holds meaning: Namchak Barwa can be translated as “Sky iron aflame”.

And yet, people’s imaginations are where the project will have to stay for the time being. For one thing, the predicted opening date for the Medog Hydropower Station is 2033. And it is one among numerous dams that the Chinese government has approved but that is far from operational.

Infeasible and Unstable

Tibet Watch has yet to see an environmental impact assessment for the dam, which would surely need to address the landslides that have already occurred along the canyon and claimed the lives of villagers in Medog County. To take only one incident, in March 2021, a slope failure hazard [caused by a collapsing glacier](#) even managed to temporarily block the river.

Due to this unstable landscape, Fan Xiao, an environmentalist and geological expert, [noted two years ago that the dam was “infeasible”](#). Furthermore, and despite recent media reports that the new mega dam would be a key part in China’s ambition of reaching net zero by 2060, Fan stated that a dam in this area would be unnecessary for the purpose of reducing emissions or supplying Tibet’s relatively modest energy needs and would carry higher transmission costs than dams elsewhere in Tibet. His conclusion: "In view of the immense negative impact on the ecological and social environments in the Yarlung Tsangpo Great Bend, and the southeastern Tibetan region, it becomes clear that pursuing hydropower development in this area may not be worth the cost."

Meanwhile, [past analysis](#) by Gabriel Lafitte, an independent expert working on Tibet’s environment since late 1970s, has revealed that previous project announcements were replete with statistics but lacked

detail of how they would actually be built. To invert the famous warning, perhaps the international media and analysts were so preoccupied with whether or not China should, they didn't stop to think if it could.

This is not to say that the dam will never be built. Certainly the Indian government felt compelled to issue a [terse statement of concern](#). The bend in the Yarlung Tsangpo river that the dam would harness is located right against the border between Tibet, where China has been rapidly building up infrastructure, and the Indian state of Arunachal Pradesh, which the Chinese government claims as Southern Tibet. Even if the dam does not materialize, the mere announcement of it plays into China's territorial claims. "I think it has more to do with the border dispute than the water directly," said Georgetown University professor Mark Giordano when [interviewed about the project](#).

And none of this is to overlook the environmental, social and ultimately moral cases for why the dam should not be built. Fan stated in his [2022 article](#) that were this unfeasible dam to go ahead, it would imperil the "genetic treasure trove of biodiversity" in southern Tibet.

Mounting Social Costs

It would also surely see the mass displacement of people, a threat that can be seen in other, more concrete dam proposals across Tibet, and which demand an urgent response from international governments and policymakers. Last year, monks and local people at Atsok Monastery were forced to dismantle their homes and remove their belongings to make way for the construction of the [world's tallest 3D-printed hydropower dam](#) on the Machu River. Atsok Monastery, built in the 19th century, was once located beside this river, but now lies in ruins under its waters while the monastery's 160 monks had to live in makeshift tin huts. The value of such an ancient monastery can neither be easily bought, sold, nor recreated.

Last February, protests erupted in Dege County – [followed by a police crackdown and hundreds of arrests](#) – against another hydropower dam on the

Drichu River. The Kamtok Dam will flood villages and destroy another six monasteries, some with Buddhist frescoes that are 500 years old. A public tender document from 2012 estimated that 4,287 residents would need to be removed from their homes to make way for the dam. The case prompted [thirteen UN human rights](#) experts to publish concerns they had raised with the Chinese government and the company responsible, China Huadian, over the "irreversible impact" impact of the dam.

Tibetan refugees who had previously shared news from Dege County have spoken to Tibet Watch about their relatives having been detained and beaten by armed police during the February 2024 protests against the dam. In a testimony, one said: "I hope I can go back and see my father just once, one last time." His father is gravely ill, while their home village is at risk of being erased from the map.

This is happening across Tibet. In a report released in December, International Campaign for Tibet found that of the 34 proposed or completed dams in Tibet where public relocation figures were available, [22,817 people were due to be displaced](#), while 121,651 people had already been expelled since 2000. Perversely, the displacement of rural Tibetans – possibly over 2 million this century according to some estimates – is likely to raise Tibet's energy consumption as nomads and farmers are placed in urban settlements.

Upriver Triggers and Tremors

These severe social costs would not be the only vicious cycle being fed by the rush to build hydropower dams further and further up Tibet's rivers. The 7.1 magnitude earthquake that shook southern Tibet this month and claimed at least 126 lives laid bare the dangers inherent on the plateau – where the Indian and Eurasian tectonic plates are continuing to mold and are still rising. It is known that dams can also create the conditions for tremors and earthquakes, a process known as 'reservoir-induced seismicity', in which the weight of water held back by a dam triggers tremors. [A check of 14 hydropower dams across Tibet](#) following the January



earthquake revealed problems including cracks in five of them, leading to three having to be emptied.

The same year that the Kamtok Dam was being approved, back in 2012, Chinese officials were noting growing numbers of landslides around the Three Gorges Dam, with [a 70 percent rise in landslides and other accidents](#) as the water levels in the reservoir rose, making the surrounding area increasingly unstable. Since its construction, 430 landslides and nearly 2,900 smaller geological incidents have been recorded. One landslide in 2003 generated a 65-foot wave, which killed at least 14 people, and four years later, 31 were killed after a landslide buried a bus. Further back, Chinese scientists observed that the opening of the Longyangxia Hydropower Station on the Machu river in 1986 had seen [“geological disasters”](#) in the reservoir area gradually emerge, including significant landslides in 2002 and 2005.

Things only get less stable upriver, where China is expanding its dam building with Tibet’s rivers already covered by dams downstream. Previously among the least disturbed habitats on earth, these areas are seeing the first signs of dam construction, [despite the warnings](#) of Tian Yinghui, an engineer at Huadian, that the process of constructing a dam in the silty upper reaches of the Drichu river would be like building a “high-rise building on tofu”.

Building at higher altitude also means building on permafrost. Outside the Arctic, Tibet’s 1.6 million square kilometre permafrost zone is the largest in the world, but as a [recent bulletin by Tibet Watch and Turquoise Roof](#) reports, the dangerous combination of the climate crisis, which is ravaging Tibet’s glaciers, and heavy construction, could see the increased thawing and freezing of permafrost, making the terrain unstable. There is another potential vicious cycle in the making here, with methane stored in the permafrost ready to be released into the atmosphere should it thaw. [Methane is 80 times more harmful than carbon dioxide](#) due to it trapping more heat in the atmosphere per molecule than carbon dioxide. The United Nations’ Intergovernmental Panel on Climate Change (IPCC) has raised the alarm about

the severe degradation and melting of permafrost on the Tibetan plateau, which is warming three times faster than the global average.

Tibetans Must Have A Say

Crucially, none of these decisions are being taken in consultation with the Tibetan people, with those speaking out risking arrest – the recent [imprisonment of whistleblower Tsongon Tsering](#) being the latest in a long line of examples.. The IPCC has noted the [link between colonialism and climate change](#), their combined effect on people: that vulnerability of ecosystems and people to climate change are also driven by patterns of intersecting socio-economic development, unsustainable ocean and land use, inequity, marginalization, historical and ongoing patterns of inequity such as colonialism, and governance.

The Chinese government has, however, justified its tightening controls and its displacement of rural Tibetans by not only claiming that it is leading a green energy transition, but also protecting Tibet’s pastures from grazing by animals such as yak. In doing so, it often strays into [stereotypes of Tibetans](#) and their traditional way of life being backward, unscientific and unproductive, routinely citing improved growth and development figures. What it has not explored is letting Tibet’s herders and farmers take the lead in maintaining the land, as the Tibetans have done for centuries. The reasons claimed by the Chinese government underpin assumptions that it knows what is best for the Tibetans, and how to protect them and their lands.

There is no solution for resolving the climate crisis in Tibet, or drawing on Tibet’s environment for green energy, that does not involve Tibetans. Ultimately, this should mean the right for Tibetans to steward their own land and resources, something which would currently be obstructed by the Chinese government. In the meantime, governments, environmental forums should be platforming Tibetan climate and environmental experts at relevant international fora and journalists and policymakers proactively seeking consultation with Tibetan thought leaders.

In the case of the Yarlung Tsangpo or Brahmaputra, the [recommendation](#) of environmental researcher Dr Lobsang Yangtso is pertinent, that there should be “a strategic alliance among environmental organizations in downstream countries to support comprehensive data sharing”, and that “[i]nclusion of local people in decision-making processes, respecting their traditional knowledge, and adopting a rights-based approach that empowers frontline communities are crucial.”

The expansion of dams across Tibet and their progress upriver has come at a high cost for Tibet’s land and people. Tibetans communities are being displaced from pastures that they have stewarded for generations, religious and cultural heritage is at risk of being erased and even Tibet’s environment and biodiversity risk irreversible harm. Tibetans are not mere bystanders to this devastation, though, and are urging for the tide of mega-development projects across their land to be pushed back. On August 14, 2024, six months after the protests that broke out in Dege County, Tibetans around the world [announced a call for a moratorium](#) on extraction and mega-development projects so long as Tibet remains occupied and so long as the use of its landscape and natural resources remains out of their control. It is with their voices that this post will finish. Heeding these words is where the international response should begin.

This blog post is a part of the ISDP’s Stockholm Center for South Asian and Indo-Pacific Affairs research project titled ‘Climate Crisis in Tibet’.

John Jones is Head of Campaigns, Policy and Research at Free Tibet and Tibet Watch, where he has worked for nine years. Working with a dedicated Tibetan field team, he has conducted and overseen research on a range of topics. These include Tibet’s environment, the ecological and social effects of mega development projects on Tibet and environmental protests by Tibetan communities against mining and hydropower dams. He has a background in conflict and development studies and human rights.