

A report by the International Campaign for Tibet

BLUE GOLD FROM THE HIGHEST PLATEAU:

Tibet's water and global climate change



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Cover: The cartoon has been realized by Fifi, alias Philippe Sadzot, who lives and works in Liège. He is a teacher at ESA Saint-Luc (Art School). Several of his stories have been published by the editors Requins Marteaux, Six Pieds sous Terre and Coiffeurs pour Dames (www.coiffeurspourdames.com).

Geographical note

The term ‘Tibetan Plateau’ is used at various points in the report, referring to the vast elevated plateau that is historically, ethnically, and culturally Tibetan. Tibet was traditionally comprised of three main regions: Amdo (northeastern Tibet), Kham (eastern Tibet) and U-Tsang (central and western Tibet). The Tibet Autonomous Region (Chinese: Xizang zizhiqu) was established by the Chinese government in 1965 and covers the area west of the Yangtse River (Tibetan: Drichu), including part of Kham, although it is often referred to now as ‘central Tibet’ in English. The rest of Amdo and Kham have been incorporated into provinces of the PRC, and where Tibetan communities were said to have ‘compact inhabitancy’ in these provinces, they were designated as Tibetan Autonomous Prefectures and Tibetan Autonomous Counties. As a result, most of Qinghai and parts of Gansu, Sichuan and Yunnan Provinces are designated by the Chinese authorities as ‘Tibetan’. The term ‘Tibet’ in this report is used to refer to all of these Tibetan areas designated by the PRC as ‘autonomous’.

Executive Summary

“The impact of climate change in Tibet is harsh. As the world focuses on climate action at United Nations’ COP21 meetings, Tibet should be central to any progress made.

The Tibetan plateau needs protecting, not just for Tibetans, but for the environmental health and sustainability of the entire world. As stewards of their own land, Tibetans’ expertise should be part of tackling climate change.”

– **The Dalai Lama**¹

Encircled by high mountains and with an average elevation of 4,500 meters above sea level, the Tibetan Plateau is the largest and highest in the world and a global biodiversity hotspot. Known as the earth’s Third Pole because of its strategic importance as the largest repository of fresh water outside the North and South Poles, it is a landscape of enormous glaciers, alpine lakes, and mighty waterfalls. As a storehouse of freshwater and the source of the earth’s eight largest river systems, Tibet is a critical resource to the world’s 10 most densely populated nations surrounding the plateau.

Coinciding with the COP21 talks in Paris, which are critical to the survival of the planet, this report highlights a staggering and little-known development – Tibet is a climate change epicenter that is warming nearly three times as fast as the rest of the earth. Its glaciers are melting, and its permafrost disappearing. And instead of seeking to protect this fragile high-altitude ecosystem and address the significant challenges it faces, China’s policies are re-shaping the Tibetan landscape with devastating consequences.

This report documents the following:

- » In what has been termed the “greatest water grab in history”, but is almost unnoticed by the rest of the world, multiple dams are being built on all the major rivers running off the Tibetan plateau by powerful state-owned Chinese consortiums.
- » Plans for a mammoth water-diversion scheme across some of the restive areas of Tibet transferring water to parched northern China will involve an influx of Chinese engineers tunneling through mountains, building more concrete walls across the wild mountain rivers, and flooding one of the richest wetland areas critical to the plateau’s fragile ecosystem.
- » The high risks of damming and water diversion projects in one of the world’s most seismically

1 See the Dalai Lama’s video message on Tibet’s environment, made in advance of the climate change conference in Paris: <http://tibet.net/cop21/>

active regions have intensified concern downstream, with China's land use policies increasingly being regarded as a matter affecting regional stability. Dams are being built on high gradients at the meeting point of three of the youngest and most unstable mountain ranges in the world without even rudimentary assessments of the impact that gouging out billions of cubic meters of rock and earth to build dams, tunnels and roads, and store millions of cubic meters of water, will have on the stability of the earth's crust.

- » Large-scale mining in copper, gold, silver, chromium and lithium, signaling the remote region's integration into the Chinese industrial economy, is having a devastating impact, leading to record levels of water pollution in Tibet. Tibetans who express even moderate concern about the impact of toxic wastes, deforestation, and large-scale erosion risk being imprisoned, tortured, or killed.
- » The Chinese government has accelerated implementation of policies to displace nomadic pastoralists from the vast Tibetan grasslands, a massive social engineering campaign that threatens to eviscerate a sustainable way of life uniquely adapted to the harsh landscape of the high plateau. This is despite a scientific consensus in the People's Republic of China [PRC] and beyond that indigenous stewardship and herd mobility is essential to the health of the rangelands and helps mitigate climate change.
- » In the same month as global climate change talks begin in Paris, the Chinese authorities have announced a dramatic expansion of the bottled water industry in Tibet, despite shrinking glaciers and the already apparent impact of the rush to exploit Tibet's rivers.
- » A combination of urbanization, intensified militarization linked to China's strategic aims, infrastructure construction and warming temperatures are creating an 'ecosystem shift' in Tibet. This involves irreversible environmental damage, including the predicted disappearance of large areas of grasslands, alpine meadows, wetlands and permafrost on the Tibetan plateau by 2050, with serious implications for environmental security in China and South Asia.

With Tibet's river waters being diverted and the flow stemmed for electricity generation in Chinese cities far from the plateau, mining, irrigation, urbanization and other economic activities fulfilling China's strategic objectives, the transboundary implications of China's control over Tibet are starker than ever.

Given its critical importance, the impact of climate change on the Tibetan plateau is not only a regional but a global issue, of unique significance for the future of life on earth.

But because water is seen as a strategic asset by the Communist Party government, and as it originates in Tibet, Beijing's policies on Tibet remain exempt from genuine debate and enquiry.

The Chinese Communist Party [CCP] authorities seek to convey the impression that their devastating policies in Tibet are aimed at conservation. The state media uses a smokescreen of opaque terminology in order to convince governments globally that their land use policies are aimed at climate change adaptation and mitigation. Dam-building is described as 'water conservation construction' and the displacement of nomadic pastoralists from the ancestral

grasslands they have protected for centuries is framed in terms of environmental protection, although the opposite is the case.

In a disturbing new development, the Chinese leadership is seeking to gain endorsement from international institutions and governments for the creation of national parks on the plateau that are contingent upon the removal of nomads from their pastures.

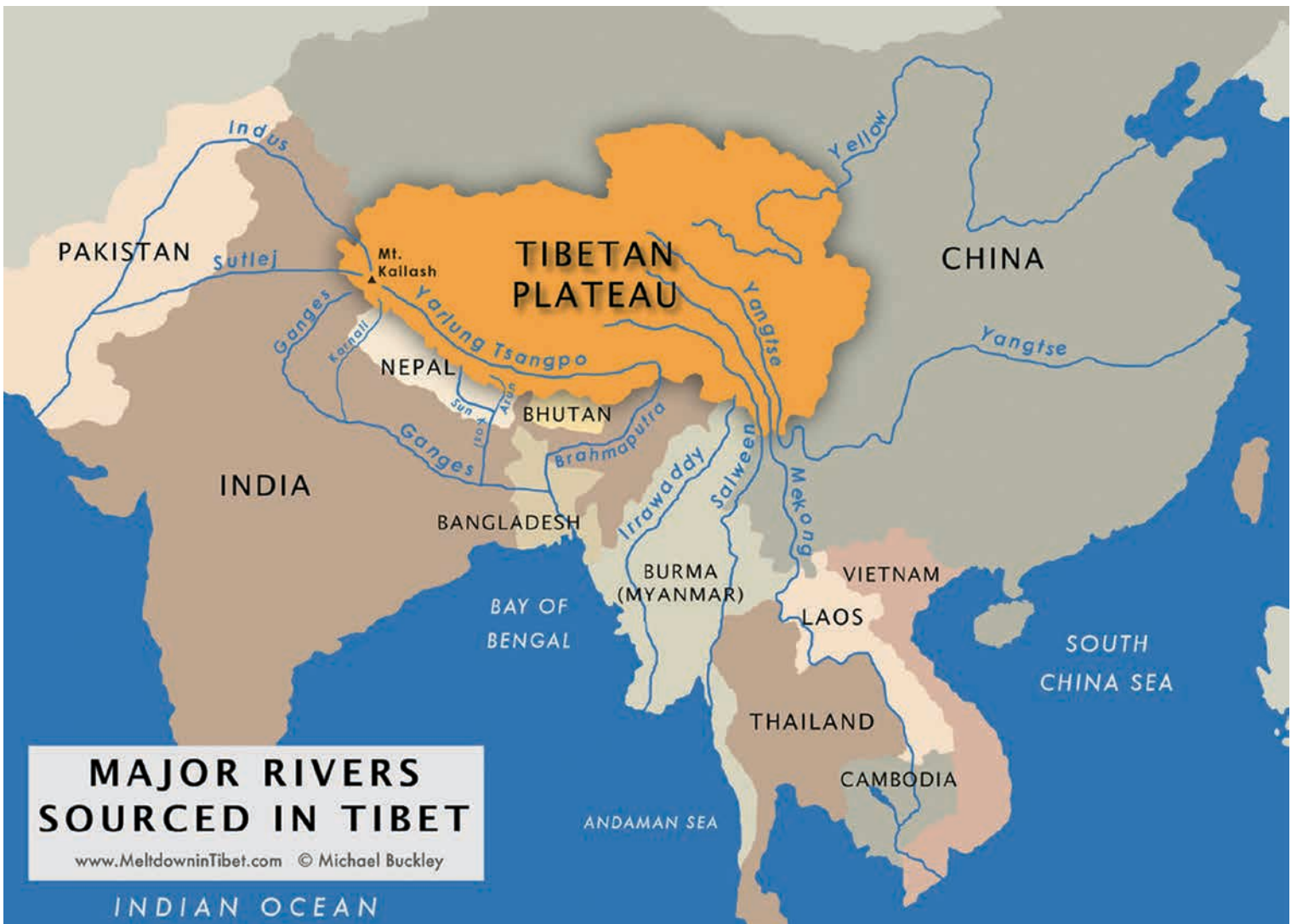
This report documents increasing criticism of these devastating policies by Chinese scholars and experts within the PRC. Together with international experts, there is a clear scientific consensus that the glacier-fed rivers and pastures of the plateau are sustained by grazing, not threatened by it.

This report is published as world leaders meet in Paris at COP21 to try to reach a deal to cut carbon emissions. Failure could be catastrophic. The state of the climate in the second half of the century and beyond will depend on the outcome.

A new approach is warranted on Tibet's 'blue gold' from the Chinese government, and the international community must directly challenge China's policies before it is too late. Given its location, with the largest reserve of accessible fresh water on earth and as the source of most of Asia's major rivers, Tibet is of increasing geopolitical significance. As such it needs to be brought back to center stage as an issue tied to Asian and global security, at the center of Asia's unfolding future.

Conserving the environment of the Tibetan plateau is an urgent task. This report sets out a roadmap for a new approach, involving a better understanding of its unique ecology and the collaboration of all of the people who have a stake in the future of Tibet. It calls for strengthened participation by Tibetan communities in the development process, based on the integration of science-based conservation with Tibetan stewardship of the land. It also requires that indigenous knowledge is better understood, including the efficacy of many traditional natural resource management practices.

Tibet needs serious attention in global talks on climate change, and China's strategies to address climate change need to involve the Tibetan people. As the Dalai Lama said: "This blue planet is our only home and Tibet is its roof. The Tibetan plateau needs to be protected, not just for Tibetans, but for the environmental health and sustainability of the entire world."



Rivers in Tibet: images courtesy of Michael Buckley, author of Meltdown in Tibet

Part One: The Tibetan landscape and Chinese Policy

Why Tibet's environment matters

“Water has emerged as a key issue that would determine if Asia is headed towards mutually beneficial cooperation or deleterious interstate competition. No country would influence that direction more than China, which controls the aqua-rich Tibetan plateau – the source of almost all the major rivers of Asia. The plateau of Tibet holds more fresh water than any place on earth, other than the polar ice caps. But while the water in the ice caps is all locked up, much of the water in Tibet is accessible.”

– **Brahma Chellaney, a professor at the Centre for Policy Research in Delhi and author of a major book on water in Asia**²

Most of Asia's biggest rivers, in the earth's largest river systems, have their source in Tibet. The Brahmaputra, or more accurately, the Yarlung Tsangpo Brahmaputra-Jamuna river, is sourced in the glaciers of the high Himalaya and makes the famous 'Great Bend', plunging through the world's deepest gorge, to the north-eastern corner of India, to the lowlands of Bangladesh and its final destination in the Bay of Bengal.

The Indus, which flows along the length of Pakistan, is sourced in Tibet while the Mekong rises high on the plateau and runs through China's Yunnan province, Laos, Thailand, Cambodia and Vietnam, while the Salween (Tibet: Gyalmo Ngulchu) is sourced in Qinghai near the headwaters of Mekong and Yangtze.³

2 Comment made at a closed door roundtable with the Dalai Lama, the Hague Centre for Strategic Studies, June 5, 2009, publication 'Water on the Tibetan Plateau: Ecological and Strategic Implications', for downloading see <http://www.hcss.nl/> or <http://www.tibetpolicy.eu/water-on-the-tibetan-plateau-ecological-and-strategic-implications-for-the-region/>

3 See map of rivers originating in Tibet on Michael Buckley's Melt-down in Tibet website http://www.meltdowntintibet.com/images/plateaumap_lg.jpg, reproduced in this report. For a detailed summary about each river, see this link on the same website: http://www.meltdowntintibet.com/f_riverbyriver.htm

The Yellow and the Yangtze rivers, less glacially-dependent for their flow than other rivers sourced on the plateau, both run to coastal China. Although for the first time in its history, in 1972, the Yellow River dried up so much that it even failed to reach the sea.⁴

Tibet is encircled by the peaks of the Himalayan range to the south, the Karakoram range to the west, the Kunlun range to the north and the Hengduan range in the east.

When Tibetans cross the high passes, they offer prayer flags and shout ‘Lha Gyalo! Victory to the Gods!’ reflecting a sacred sense of landscape that has, until now, helped to protect Tibet’s fragile ecosystem. This concept of sacred mountains, lakes and valleys where flora and fauna were to be left untouched emerged from the animist faith of Bon, while Buddhists believe there is a very close interdependence between the natural environment and the sentient beings living in it.⁵ This concept of interdependence between human beings and nature has infused much of the distress among Tibetans at the mining of mountains perceived as sacred, or damming of holy lakes.

The Dalai Lama’s promotion of global interdependence and protection of the environment was one of the reasons that he was awarded the Nobel Peace Prize in 1989. In his acceptance speech, he said: “Both science and the teachings of the Buddha tell us of the fundamental unity of all things. This understanding is crucial if we are to take positive and decisive action on the pressing global concern with the environment.”⁶

In a similar reflection of the importance of Buddhist belief in interdependence and taking responsibility to protect the environment, Tibetan religious leader the 17th Karmapa, head of the Karma Kagyu school of Tibetan Buddhism, provides conservation leadership through the organisation ‘Khoryug’ (Tibetan for ‘environment’) across the Himalayas.⁷

The Karmapa, who is from a nomadic family, wrote: “I come from a region of Tibet that is considered backward by people who live in Lhasa, let alone in the West. My family lived in conditions that many would think very harsh and undeveloped. And yet my father, who never attended school, knew from his own father that if you want to protect a spring, you should plant trees. I think we will find that indigenous people, who live closest to nature, are often our greatest allies in trying to protect it.”⁸

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4 Leading Chinese water activist Ma Jun said: “The once mighty [Yellow River] has by now become a small, filthy stream that cannot even flush much of its sediment into the sea.” Cited in ‘Thirsty China: Its Key Resource Constraint is Water’, Water Risk, 2006, chinawaterrisk.org

5 For example see the Dalai Lama on “ecology and the human heart”, <http://www.dalailama.com/messages/environment/ecology-and-the-human-heart>

6 Secret American cables revealed by Wikileaks and published by The Guardian said that the Dalai Lama told US diplomats in 2009 that the international community should focus on climate change rather than politics in Tibet because environmental problems were more urgent. The Guardian, ‘WikiLeaks cables: Dalai Lama called for focus on climate, not politics, in Tibet’ by Jason Burke, December 16, 2010, <http://www.theguardian.com/world/2010/dec/16/wikileaks-dalai-lama-climate-change>

7 Khoryug, founded by the 17th Karmapa, who escaped into exile in India from Tibet in 1999-2000, is a non-sectarian association of Tibetan Buddhist monasteries dedicated to environmental protection on the Buddhist principle of the interdependence of all sentient beings and the earth. <http://www.worldwildlife.org/stories/tibetan-monasteries-at-work-for-the-environment>.

8 ‘Walking the Path of Environmental Buddhism through Compassion & Emptiness’ by the 17th Karmapa, Talk at 23rd Mind & Life conference, ‘Ecology, Ethics & Interdependence’. Video at: <http://www.ecobuddhism.org/wisdom/interviews/hhk2011>. What the Karmapa is suggesting is in line with global experience which shows that the most effective way of achieving REDD (Reducing emissions from deforestation and forest degradation) objectives is by including pastoralists as part of the solution rather than excluding them as part of the problem.



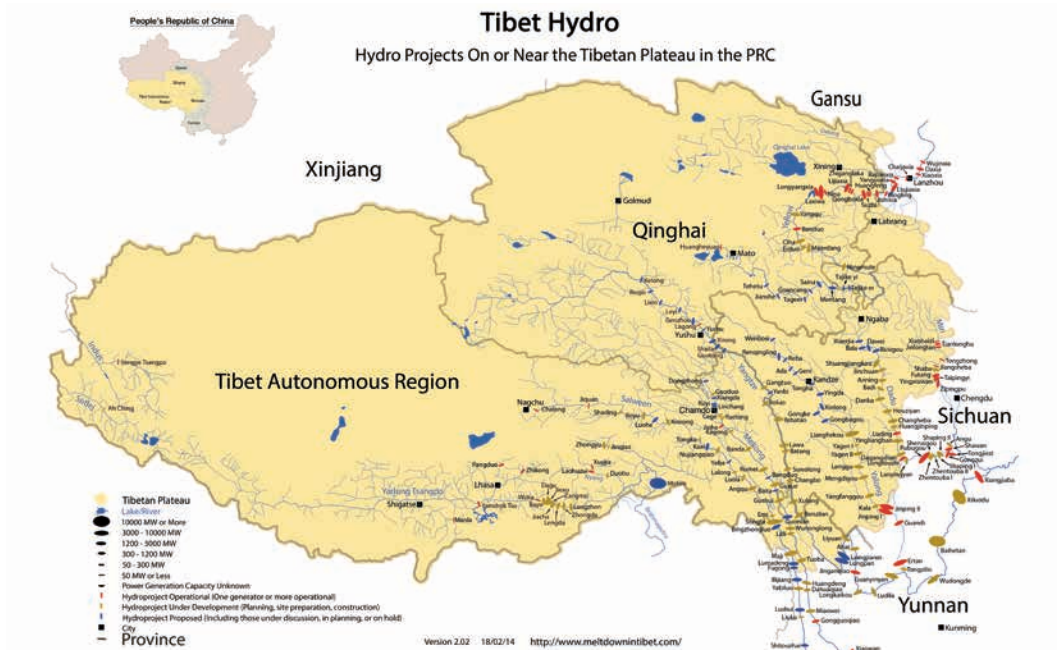
Tibet from space. The Himalayan Range looking from east to west with Tibet on the right. Nam Tso Lake is visible on the lower right of the image. Image courtesy of NASA, taken on December 4, 1988. Also see Daniel J. Miller, Daniel Miller's book 'Tibet from Space: Astronaut Photos of the Tibetan Plateau and Himalaya'.

Tibet, which is known as a global biodiversity hotspot, is the prime habitat of some of the world's rarest wildlife species such as the Tibetan antelope and the snow leopard, and home to more than 5,760 species of plants of which more than 1,000 varieties have commercial utility as medicinal herbs.⁹ The fauna is uniquely suited to the altitude. Bar-headed geese, for instance, known as "astronauts on the wing",¹⁰ migrate across the Himalayas twice a year, soaring high enough to clear Mount Everest (Tibetan: Chomolungma).

Tibet's globally significant biodiversity is divided into three ecological zones: high altitude steppe grasslands; the forests of the eastern and south-eastern plateau, and the mixed shrub and agricultural lands of south-central Tibet – all interspersed with high mountain ranges with extensive alpine zones, glaciers and icefields.

⁹ Details given during a roundtable with the Dalai Lama, the Hague Centre for Strategic Studies, June 5, 2009, publication 'Water on the Tibetan Plateau: Ecological and Strategic Implications', ibid.

¹⁰ Michael Buckley, 'Meltdown in Tibet: China's Reckless Destruction of Ecosystems from the Highlands of Tibet to the Deltas of Asia', Palgrave Macmillan, 2014, p 24.



Hydro projects on or near the Tibetan Plateau. Map captioned in English from author Michael Buckley's website, www.meltdownintibet.com



Left and bottom right: Since a wave of overwhelmingly peaceful protests swept across Tibet from March 2008 the Chinese leadership has stepped up its military buildup and strengthened the policies and approaches that are the root cause of the acts, such as aggressive campaigns against loyalty to the Dalai Lama, indicating their determination to ensure implementation of their strategic and economic objectives on the plateau. This image shows troops at Kumbum monastery in Qinghai in March, 2015, as pilgrims gather for a religious ceremony.

Top right: Military in the street in Labrang, Gansu (the Tibetan area of Amdo) in following the self-immolation of a Tibetan on October 22, 2012 in the main street of Labrang, Sangchu county, Kanlho Tibetan Autonomous Prefecture, Gansu. Dhondup, a Tibetan man in his fifties, became the 57th Tibetan to self-immolate when he set fire to himself in protest on October 22, 2012 outside Labrang Tashikyil monastery. Since 2009, more than 140 Tibetans have self-immolated in what has become one of the biggest waves of such political protest worldwide in the past 60 years.

From Pakistan in the West to Vietnam in the East, these glaciers and mountains provide water for human consumption, irrigate farmlands, generate hydropower and provide food and water for the rapidly increasing population and expanding industries across Asia, including India and China, the fastest growing economies of the 21st century.

The warming of the plateau and glacial melt

It is little-known globally that Tibet is now warming nearly three times as fast as the rest of the world.¹¹ A 2007 study by the Tibet Autonomous Region (TAR) Meteorological Bureau found that the TAR is experiencing a 0.3°C increase in temperature every decade,¹² over twice the global average with four of the five warmest winters in the last 35 years in the TAR occurring since 2000.¹³ Ice core records from the Dasuopu glacier in Tibet reveal that the last 50 years have been the warmest in 1,000 years.¹⁴

Citing lack of data as an impediment to detailed research, a more recent survey confirmed that in the past 20 years, temperatures above 4,000 meters of the plateau region have warmed nearly 75 per cent faster than that in areas below 2,000 meters. The study, produced by global change research body the Mountain Research Institute, highlighted that without substantial information, the world is at risk of underestimating the severity of a number of problems like water shortage and the possible extinction of some alpine flora and fauna species.¹⁵

Glaciers in the Himalayas are shrinking fast. “The glaciers are virtually being decapitated from the top by a warming climate,” says Kang Shichang, a glaciologist at Chinese Academy of Sciences’ Institute of Tibetan Plateau Research in Beijing.¹⁶

Rajendra K. Pachauri, chairman of the Intergovernmental Panel on Climate Change, was cited as saying: “At least 500 million people in Asia and 250 million people in China are at risk from declining glacial flows on the Tibetan Plateau. This is one of the great concerns – a staggering

11 The China Meteorological Administration calculates that temperatures on the plateau have risen an average of 0.58 degrees Fahrenheit per decade, more than four times the average warming rate in China as a whole. “A plateau is almost like a frying pan in the sky. It has to do with the way the land interacts with the atmosphere. Everywhere in the world, the mountains are heating up faster than the lowlands,” said Barry Baker, a climate change expert with the Nature Conservancy, who is also studying the glaciers in Yunnan province. Cited by Barbara Demick, Los Angeles Times, December 15, 2009. Also see: <http://factsanddetails.com/china/cat6/sub38/item1734.html>

12 Xinhua, November 20, 2007

13 Asian News International report archived by New Scientist, July 25, 2007

14 ‘Environmental information recorded in shallow ice core of Dasuopu glacier in the Qinghai-Tibetan Plateau’, Cuilan Huang, Tandong Ya, Jianchen Pu, Keqin Duan, Ninglian Wan and Lide Tian (<http://link.springer.com/article/10.1007%2FBF02883475>) Correspondence, Chinese Science Bulletin November 1998, Volume 43, Issue 22, pp 1935-1936

15 ‘High altitude areas of Tibetan Plateau warming faster than lower regions’, by Jyontsa Singh, May 27, 2015, <http://www.downtoearth.org.in/news/high-altitude-areas-of-tibetan-plateau-warming-faster-than-lower-regions-49939>

16 Kang Shichang had examined ice cores drilled from two Tibetan glaciers at about 6,000 meters, he explained at the 28th Himalayan Karakoram Tibet Workshop and the 6th International Symposium on Tibetan Plateau Joint Conference in Tubingen, Germany, in August, 2013. At the same conference, Achim Bräuning, a palaeoclimatologist at the University of Erlangen-Nuremberg in Germany, said: “Higher elevations tend to have colder temperatures year-round. We used to think that glaciers at high elevations were pretty safe, but this study shows that this might not be the case — at least at certain locations.” ‘Tibetan glaciers are shrinking at their summits’ by Jane Qui, Nature, September 13, 2013, <http://www.nature.com/news/tibetan-glaciers-are-shrinking-at-their-summits-1.13767>

number of people will be affected in the near future. There aren't too many researchers who have looked at this water situation and its far-reaching impacts."¹⁷

The melting of glaciers means more flooding in the short-term and more droughts in the long-term. According to Chinese scientist Liu Shiyin: "The shrinking of glaciers has picked up speed in the past decades. While there might be more water in the rivers at present because of the increased melting, in the long run, the glacier water will decrease, and droughts will follow".¹⁸

Dr Katherine Morton, a specialist in climate change and regional security in Tibet who is based at the University of Sheffield in the UK, writes: "Glacial melt has dramatic adverse effects on biodiversity, people and livelihoods with long-term implications for water, food and energy security. It can also trigger a higher incidence of natural disasters – landslides, flooding and glacial lake outbursts – that can, in turn, lead to internal displacement and the destruction of critical infrastructure. Over the longer term, higher temperatures will increase flooding in the rainy season and reduce water in the dry season, thus affecting food production in the provinces downstream, as well as the livelihoods of over 1 billion people in China, India, Nepal and Bangladesh. Eventually water shortages will occur on a massive scale. The consequences for a region that is already highly prone to both floods and drought are dire. We are, in effect, facing a humanitarian catastrophe in the world's most populous region."¹⁹

China's land use policies and their impact

Scientists believe that in Tibet as elsewhere one driver of climate change may be land cover and land use changes relating to agriculture and urbanization. These factors may even outweigh 'greenhouse gas forcing'.²⁰ "The many civil engineering projects currently under way, such as the construction of the Qinghai-Xizang railroad [complete in 2006], combined with a conscious effort by China to urbanize the Tibetan plateau, will lead to further and likely greatly accelerated population increases and land surface changes in the future," said scientists Oliver

17 Interview with Circle of Blue, 'China, Tibet, and the Strategic Power of Water', May 8, 2008, by Keith Schneider and C. T. Pope, <http://www.circleofblue.org/waternews/2008/world/china-tibet-and-the-strategic-power-of-water/> The UN Intergovernmental Panel on Climate Change is sometimes quoted as saying that the Asian glaciers would disappear by the year 2035, but this turned out to be an error based on the transposition of numbers from the year 2350 to 2035. But it is equally possible that the ice will disappear sooner. See 'The IPCC's 2035 prediction about Himalayan glaciers', posted on 21 January 2010 by John Cook, <http://www.skepticalscience.com/IPCC-2035-prediction-Himalayan-glaciers.html>

18 Liu Shiyin from the Chinese Academy of Science's Cold and Arid Regions Environment and Engineering Research Institute was quoted in 'Glaciers melting at alarming speed', China Daily, July 24, 2007, available at: www.chinadaily.com.cn.

19 'An uncertain future on the Plateau' by Katherine Morton, April 28, 2009, <https://www.chinadialogue.net/article/show/single/en/2961>

20 Anthropogenic' greenhouse gas forcing is generally considered to be the main cause of the observed warming in high-elevation areas. Anthropogenic effects, processes, objects, or materials are those that are derived from human activities, as opposed to those occurring in natural environments without human influences. Oliver W. Frauenfeld (NSIDC/CIRES CPP) and Tingjun Zhang (NSIDC/CIRES CPP) write: "Like elsewhere on the globe, an equally important anthropogenic component to climate change may be land cover and land use changes on the TP [Tibetan Plateau]. These local—regional surface effects related to agriculture and urbanization potentially outweigh greenhouse gas forcing. In fact, our recent research has shown that plateau-averaged station records, biased toward low-lying populated regions, show a warming trend of 0.16°C decade — 1 over the last 50+ years. However, plateau-wide trends from an independent data source free of surface contamination indicate no trend. This has led us to hypothesize that, indeed, land use/cover change (LUCC) could largely account for the reported warming on the Tibetan plateau." From 'Is Climate Change on the Tibetan Plateau Driven by Land Use/Cover Change?', a winning proposal for the Cooperative Institute for Research in Environmental Sciences Innovative Research Program, 2005, jointly sponsored by the University of Colorado at Boulder and the Office of Oceanic and Atmospheric Research at NOAA.



Nomadic pastoralists across Tibet are being displaced from the grasslands and resettled in often bleak concrete encampments in remote areas far from community amenities or near new roads and urban areas as part of China's ambitious and elaborate plans that are re-shaping the Tibetan plateau.

W. Frauenfeld and Tingjun Zhang. "According to some studies, the carrying capacity of parts of the Tibetan Plateau has been far exceeded, partly due to inappropriate land management practices implemented in the 1950s. Additionally, urbanization, which can result in 8–11°C higher temperatures than in surrounding rural areas, has occurred on the Tibetan plateau in cities such as Lhasa, Golmud, and Xining."²¹

Scientists have now warned of an 'ecosystem shift' on the plateau due to climate change and human activities, reducing future water supply to China and South Asia. Warming temperatures, combined with a dramatic infrastructure boom, a growing population and overgrazing are combining to push fragile ecosystems on the world's largest and highest plateau from one state to another, according to scientists from the Kunming Institute of Botany.²²

This irreversible shift will mean the region would no longer be able to provide key environmental services – such as water and carbon storage – to the rest of Asia. It would mean that areas of grasslands, alpine meadows, wetlands and permafrost, essential to Tibet's biodiversity, will disappear on the Tibetan plateau in the next 35 years.

²¹ 'Is Climate Change on the Tibetan Plateau Driven by Land Use/Cover Change?' a winning proposal for the Cooperative Institute for Research in Environmental Sciences Innovative Research Program, 2005, jointly sponsored by the University of Colorado at Boulder and the Office of Oceanic and Atmospheric Research at NOAA.

²² 'Building ecosystem resilience for climate change adaptation in the Asian highlands' by Jianchu Xu and R. Edward Grumbine, August 28, 2014, <http://wires.wiley.com/WileyCDA/WileyArticle/wisId-WCC302.html>

Disappearing permafrost

Permafrost, the frozen layers of soil that underpin two thirds of the plateau and provide essential carbon and water storage, is degrading rapidly in Tibet. According to a recent Chinese scientific report, about 81 percent of the permafrost on the Tibetan plateau may disappear around 2100 due to the warming climate.²³

Only weeks after the opening of the Qinghai-Tibet railway in 2006, the Chinese state media announced that fissures had begun to develop in its concrete structures due to the sinking and cracking of its permafrost foundation.²⁴ Chinese scientists have since admitted that the safety of the Golmud-Lhasa railway (and other rail links across the plateau), could be threatened by melting permafrost on which the tracks are built.²⁵

While glaciers and permafrost melt, areas covered by natural vegetation could expand; making more land available for farming and raising livestock. However, the mismanagement of expanding farming and pastoral areas, coupled with the increased chances of drought due to climate change, could instead result in increased desertification.²⁶

²³ Xinhua, November 18, 2015, in English, http://news.xinhuanet.com/english/2015-11/18/c_134828505.htm

²⁴ For details of the engineering work and expenditure required for building on the shifting permafrost of the Tibetan plateau, see Abram Lustgarten, 'China's Great Train: Beijing's Drive West and the Campaign to Remake Tibet', Times Books, 2008. A railway technology website stated: "Some 550m of its tracks are on frozen earth, passing through both the world's most elevated tunnel – Fenghuoshan Tunnel (4,905m) – and the longest plateau tunnel – Kunlun Mountain (1,686m) – to be built on frozen earth. [...] Around half of the Golmud to Lhasa section was laid on barely permanent permafrost with winter temperatures that plummet to -35°C, while the summer's 30+° sees the upper layers thawing to mud. The engineers approached this problem by constructing elevated tracks and causeways over some of the most difficult terrain, while in other areas, pipes have been installed to circulate liquid nitrogen below the rail bed to keep the ground frozen." (<http://www.railway-technology.com/projects/china-tibet/>) See more at ICT report, 'New strategic rail network to Tibet's borders endangers environment, raises regional security concerns (Updated)', November 12, 2014, <http://www.savetibet.org/new-strategic-rail-network-to-tibets-borders-endangers-environment-raises-regional-security-concerns/#49>

²⁵ Reuters, citing China Meteorological Administration head Zheng Guo Guang, May 6, 2009: <http://www.reuters.com/article/2009/05/06/us-china-climate-tibet-idUSTRE5451IM20090506>

²⁶ Climate Change 2007: Impacts, Adaptation and Vulnerability', contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), Cruz, R.V., H. Harasawa, M. Lal, S.Wu, Y. Anokhin, B. Punsalmaa, Y. Honda, M. Jafari, C. Li and N. Huu Ninh, 2007; Eds: M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Cambridge University Press, Cambridge, UK, pp. 469–506; p. 486.



Beijing's policies on Tibet remain exempt from genuine debate and enquiry, and there is little acknowledgement of how land use policies are dangerously impacting environmental degradation. Scientists have linked major infrastructure projects, such as the high-altitude train to Lhasa pictured here, with warming of the plateau.

Part Two: 'An internal affair': Beijing's policies on Tibet's environment

Tibet's water as strategic asset

"At a deeper level, the threat of large-scale environmental catastrophe reaffirms the need for a twenty-first century view of progress that moves imperatively beyond the nineteenth century model of nation-building based on the expansive exploitation of natural resources. Rather than simply a strategic buffer zone caught between the ambitions of great powers, the Tibetan Plateau could become a strategic conservation zone acting as a buffer against environmental catastrophe that threatens one-fifth of humanity."

– Dr Katherine Morton, expert on climate change and regional stability²⁷

The reports about the cracks in the railway foundations due to disappearing permafrost, and other similar reports in the Chinese state media, are signs that the government is acknowledging, to an extent, the changing condition of Tibet's water supply. But there is a striking discrepancy between official admissions of the environmental crisis in Tibet by Chinese leaders, and the apparent refusal by the Chinese government to accept that this has any implications for development strategy in Tibet.

Beijing's policies on Tibet, including on critical environmental questions, remain exempt from genuine debate and enquiry. There is little or no acknowledgment of how land use policies are dangerously impacting environmental degradation.

When journalists for a website on the world's resource crises sought to interview scientists in China, they observed that "While most scientists in the region agree that the Tibetan Plateau's

²⁷ 'An uncertain future on the Plateau' by Katherine Morton, April 28, 2009, <https://www.chinadialogue.net/article/show/single/en/2961>

water resources are crucial to the future of China and Southern Asia, many declined to be interviewed for fear of losing access to their research sites.”²⁸

This is because Tibet’s water is viewed as an ‘internal matter’ for the CCP of critical importance to its national security, and its strategic and economic objectives. The pro-dam lobby is powerful and aligned with major Chinese consortiums involved in the implementation of ambitious and elaborate plans to re-shape Tibet. Water is seen as a strategic asset, and because it originates in Tibet, has an added political sensitivity. The CCP attempts to deflect genuine international enquiries, using terminology intended to convey the impression their policies are aimed at conservation, without acknowledging the intensifying degradation of the environment. For instance, as this report shows, building mega-dams are described as ‘water conservation’ projects. In an extreme example of ‘green-grabbing’, nomads are being removed from the grasslands their indigenous knowledge protects, to make way for natural parks that China frames as part of their climate change mitigation.

The political stakes are high, meaning that even moderate criticism is often not possible. At the ‘Sixth Work Forum’ in August 2015, the first major policy meeting on Tibet to be presided over by Party leader Xi Jinping since he came to power, it was made clear that Tibet is not of marginal concern but a matter of the highest priority to the leadership of the Chinese Communist Party (CCP).

To the leadership, Tibet is viewed as an issue of China’s ‘national security’, with senior Chinese political advisor Yu Zhengsheng stating at a rally in Lhasa in August (2015): “Tibet plays an important role in safeguarding national security, and it is in the interests of all Tibetan people to maintain national unity and ethnic solidarity.”²⁹

Party officials equate political ‘stability’ in the Tibet Autonomous Region - political language for the elimination of dissent and enforcement of compliance to Chinese Communist Party policies - with the security of the entire PRC, partly because Tibet is an important border area.³⁰ Many of the dams in Tibet are being built in the Nyingtri area (Kongpo, Chinese: Linzhi), in the TAR, a highly militarized area that borders Arunachal Pradesh in India.³¹

28 ‘Circle of Blue’, a website run by leading journalists and scientists, providing on-the-ground information about the world’s resource crises, <http://www.circleofblue.org/waternews/2008/world/china-tibet-and-the-strategic-power-of-water/>

29 ICT report, September 8, 2015, <https://www.savetibet.org/tough-warnings-on-anti-separatism-from-party-leaders-at-political-anniversary-in-tibet/>

30 Chairman of the Tibet Autonomous Region’s People’s Congress Pema Thinley (referred to as Padma Choling by Chinese media) underlined this approach on China’s National Day, October 1 (2015), when he said: “Tibet’s stability is tied to national stability, and Tibet’s security is tied to national security.” (Tibet Daily, October 3, 2014, http://epaper.chinatibetnews.com/xzrb/html/2014-10/03/content_572862.htm). See ICT report, September 8, 2015, <https://www.savetibet.org/tough-warnings-on-anti-separatism-from-party-leaders-at-political-anniversary-in-tibet/>

31 As an analysis of the political repercussions of planning for the Yarlung Tsangpo river, Prem Shankar Jha writes that following the announcement of some of the water use plans, the Chinese Ambassador in New Delhi made a statement saying that China considered the whole of the northeastern state of Arunachal Pradesh to be a part of Tibet. This was a reversal of its earlier position, developed in a succession of bilateral negotiations since 1994, that China was prepared to settle for a substantial modification of some parts of the existing temporary boundary, called the Line of Actual Control. The announcement took the Indian government by surprise and was followed by three years of rising tension along the border. China began to refer to Arunachal as “South Tibet”, and to its principal monastery at Tawang as Tibet’s second most important monastery after Lhasa. It also began to deny visas to Indian officials who were from Arunachal Pradesh. The tension was not defused until there was a *meeting between then premier Wen Jiabao and prime minister Manmohan Singh*, at Hua Hin, Thailand, in October 2009, designed specifically to prevent its *spilling over* into military conflict.” (<http://www.chinadialogue.net/article/show/single/en/6753-Why-India-and-China-should-leave-the-Yarlung-Tsangpo-alonewho>)

China's current economic imperatives emerge from the CCP's ambitious and transformative campaign of '*Xibu da kaifa*', the strategy to develop the western regions of the PRC. The Chinese term *kaifa* in this context is often rendered into English as 'development'; however, standard dictionaries define *kaifa* as 'develop', 'open up' and 'exploit', which reflects how the Party perceives the western areas of the PRC - essentially as providers of resources in order to facilitate development in the central and eastern regions.

China's leaders hope that the PRC's western region's resources can help to satisfy the nation's rising demand for water, minerals and energy – and now, additionally, as a driver for tourism. *Xibu da kaifa* is a high-profile political campaign, initiated by the then Chinese President and CCP Chairman Jiang Zemin in 1999–2000. As one of the major dynamics of contemporary China, it is an enormous undertaking, affecting more than 70% of the PRC's land area and almost a quarter of its vast population, including Tibetans, Uyghur Muslims and other 'national minorities'. The drive is not restricted to the 10 western provinces of the PRC but includes underdeveloped provinces with large ethnic populations in other regions, especially Inner Mongolia and Guangxi.

The integration of Tibetan areas into China and exploitation of the natural resources of the Tibetan plateau have been priorities since the foundation of the PRC, and the Western Development Strategy represented an acceleration of this process.

For the 13th Five-Year Plan period, which begins in 2016, the Chinese authorities are focusing on “the relocation of the world's factory away from China's east coast to new hubs far inland, at the foot of the Tibetan Plateau, which will draw their raw materials from Tibet rather than from imports”, according to environmental specialist Gabriel Lafitte. “Tibet, Asia's number one water tower, is to provide the water, copper, gold, silver and many other metals, plus enormous flows of hydropower to the factories of Chongqing, Chengdu, Lanzhou and Xining that make all the big brand consumer products in our pockets. This too is transforming Tibet, as China's resource nationalism finds domestic sources to substitute for imports, primarily in Tibet and elsewhere in western China.”³²

Many Chinese economists and analysts in the PRC have criticized the current form of infrastructural, GDP-oriented growth, pointing out that it is potentially dangerous, probably unsustainable, likely to damage local resources and environment, and encourages outside migration and profit extraction. It is imposed from the top down in Beijing, with scant regard for local needs, views and livelihoods.³³

This model of development, based on resource exploitation and infrastructure construction, is increasing, rather than decreasing, Tibet's dependence on subsidies from the central government, especially in the TAR. Calling this the “disempowered development of Tibet in China”,³⁴ development economist Dr Andrew M. Fischer draws attention to the surge in subsidies in the TAR, without accompanying economic growth. Fischer states that subsidy-

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³² 'Pitching Tibet in a new key' posted by Gabriel Lafitte on his website rukor.org, November 21, 2015

³³ For further analysis, see ICT's report, 'Tracking the Steel Dragon: How China's economic policies and the railway are transforming Tibet', available for downloading at <http://www.savetibet.org/wp-content/uploads/2013/03/TrackingTheSteelDragon.pdf>

³⁴ 'The Disempowered Development of Tibet in China: A study in the economics of marginalization', by Andrew Martin Fischer, Lexington Books, 2014

driven growth has also been associated with a rapid transition of the local Tibetan labour force out of the primary sector of herding and farming, and into construction and urban service sector employment, taking place at a faster pace than anywhere else in China, but it has been without the productive economic foundations or local political autonomy to support these changes.³⁵

“To say that the perverse characteristics of this subsidy-driven economic model are somehow related to marketisation, or neoliberalism, diverts attention away from the central role of the state in shaping the deeply structural character of these transformations,” writes Andrew Fischer. “The state could dramatically change the situation by adopting a different policy approach in Tibet. This must go beyond simply increasing cultural sensitivity in the delivery of economic development strategies. It would need to embrace, for instance, a far more proactive approach to preferential employment. But ultimately the social tensions and inequities associated with the current economic strategy will continue to persist as long as the structures of ownership and power in the local economy remain unaddressed.”³⁶

These policies are not only transforming the physical landscape of Tibet, but also the inner landscape of Tibetan lives, their identity and culture, as this report shows.

Tibet's influence on global climate

It is increasingly recognized that Tibet's climate and land use policies should not be treated solely as an 'internal affair' of the Chinese government. Although many specific details remain elusive, at least in part due to lack of data, scientists are increasingly acknowledging the key role played by Tibet in the global climate system. What happens on the Tibetan plateau influences climate and atmospheric changes not only in Asia, but as far away as East Africa and even Europe.

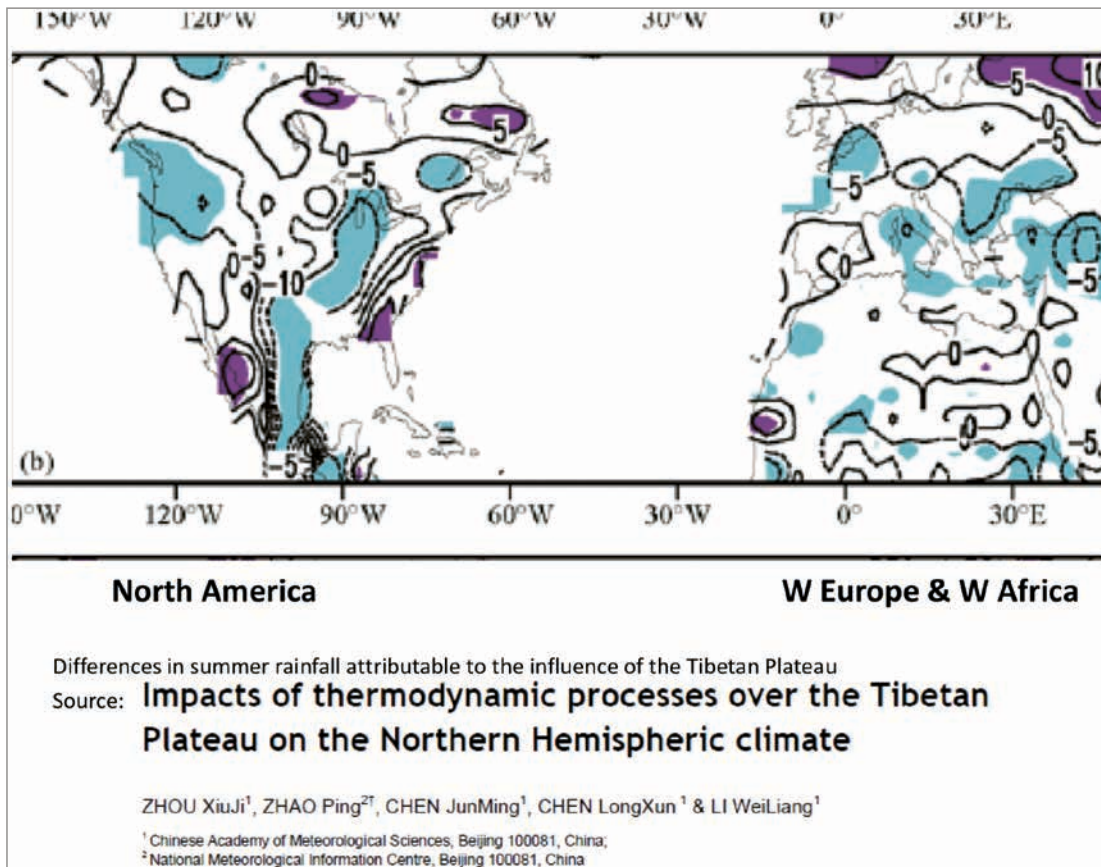
A recent Chinese scientific report stated that worsening heatwaves in Europe and north-east Asia are linked to thinner snow-cover on the Tibetan Plateau, highlighting the plateau's key role in global weather systems.³⁷

Environment specialist, Australian scholar Gabriel Lafitte explained to European Parliamentarians in a meeting in advance of the Paris climate change talks: “The Tibetan plateau is the size of Western Europe, and its bulk, its seasonal cooling and heating directly affect the atmosphere, right across the northern hemisphere. The jet stream that meanders across the planet is deflected by the sheer bulk and altitude of the Tibetan Plateau, which is

35 'Tibet's economic growth an accounting illusion?' by Andrew M. Fischer, Institute of Social Studies (The Hague), July 9, 2015, <http://www.eastasiaforum.org/2015/07/09/tibets-economic-growth-an-accounting-illusion/>

36 Andrew M. Fischer, *ibid*

37 Professor Wu Zhiwei and her team of scientists at Nanjing University of Information Science and Technology used monthly snow cover and air temperature data from the past fifty years to build a global circulation model. Their findings show that reduced snow cover on the Tibetan plateau triggers high pressure over southern Europe and northeast Asia, reducing cloud formation and pushing up temperatures. Warmer and drier conditions in turn further inhibit cloud formation, intensifying local heat waves, according to a paper they published recently in *Climate Dynamics*. See Beth Walker, September 28 (2015), China Dialogue, <https://www.chinadialogue.net/blog/8204-Less-snow-in-Tibet-means-more-heatwaves-in-Europe-en>. The authors of the paper acknowledged the lack of high quality and long-term climate data for the Tibetan plateau.



Scientists are increasingly acknowledging the key role played by Tibet in the global climate system; what happens on the Tibetan plateau influences climate in the Northern Hemisphere as well as in Asia.

close to two percent of the planetary land surface. In winter, cold polar air pushes southwards, and the jet stream is deflected to the Himalayas, which protect India from the intense cold of continental inner Asia. In spring and summer, the Tibetan plateau, especially the bare rock of the upper slopes, heats fast, so fast that the jet stream switches far to the north, deflected around the northern plateau edges, thus drawing in from the far Indian Ocean the rain bearing clouds of the monsoon.”³⁸

Climate scientists have looked along the latitude circling the northern hemisphere, from the Tibetan Plateau, across East Asia, the north Pacific, North America, the Atlantic and on to Europe, and found that air pushed into the upper troposphere by Tibet only descends when it reaches Europe. This means that climatically, Tibet and Europe are directly connected.

³⁸ ‘Environmental Degradation on the Third Pole’, A briefing for members of the European Parliament, Brussels, November 16, 2015, <http://rukor.org/environmental-degradation-on-the-third-pole/>



Water surges from the enormous Zangmu dam at the hydro-power station on the highest river in the world, the Yarlung Tsangpo, soon after it became operational in November, 2014. Image from the Chinese official news agency Xinhua.



This image from the official media shows the Zangmu dam on the Yarlung Tsangpo river. The last remaining generator of the dam became operational in October (2015), intensifying fears downstream in India given the high risk to damming upstream in one of the most seismically sensitive areas on earth.



This image from the Chinese state media shows the launch of the electricity grid between the Tibet Autonomous Region and Sichuan on November 20, 2014. The rapid dam-building in Tibet is intended to produce energy in hydro-electric power stations to be conveyed along high-voltage transmission lines for China's expanding urban centers far from Tibet.

Part Three: Tibet's water and Chinese policies

'The greatest water grab in history'; damming the plateau

Half of all the dams in the world are now in China – it has built more large dams than the US, Brazil and Canada combined.³⁹ After all the rivers in northern, central and eastern China had been dammed, the Chinese authorities began to look west, aware that the rivers rushing through deep canyons at the edge of the Tibetan plateau hold the highest hydropower potential in the world.

Almost unnoticed by the rest of world, tens of thousands of engineers are building dams on Tibet's rivers in order to produce energy in hydro-electric power stations to be conveyed along ultra-high voltage transmission lines for China's expanding urban centers far from Tibet.⁴⁰ The intention is to integrate Tibet into the national grid, with connections between hydro-dams and long-distance electricity supply from the foot of the Tibetan plateau to Guangdong. Locally, the electricity generated will also be used for mining and mineral processing.

Indian analyst Brahma Chellaney, one of the leading experts to highlight the significance and strategic implications of China's land use policies in Tibet, terms it the "greatest water grab in history".⁴¹

The rapid and large-scale development of mineral and hydropower resources across the plateau, combined with the dramatic expansion of a road, rail and air network, are key elements of China's centrally planned development targets for Tibet, which include the development of tourism.⁴² The dams, many of which are being constructed in the sensitive and highly

³⁹ Beth Walker and Liu Qin in *The Diplomat*, 'The Hidden Costs of China's Shift to Hydropower', July 29, 2015, <http://thediplomat.com/2015/07/the-hidden-costs-of-chinas-shift-to-hydropower/>. Also see Brahma Chellaney, 'Water: Asia's New Battleground', p 61

⁴⁰ For Google Earth images of some of the large dams, see Michael Buckley's *Meltdown in Tibet* website, 'Big Dam Gallery', http://www.meltdownintibet.com/f_damgallery.htm

⁴¹ Brahma Chellaney, cited in 'China and India "water grab" dams put ecology of Himalayas in danger', by John Vidal, *The Guardian*, August 10, 2013, <http://www.theguardian.com/global-development/2013/aug/10/china-india-water-grab-dams-himalayas-danger>

⁴² This is an increasingly significant development that is beyond the scope of this report to explore. It will be examined in upcoming ICT reports. Tourism in Tibet has hit a record high, and the majority of tourists to Tibet are no longer Western backpackers but middle-class Chinese. The push to advance tourism to Tibet is an integral element of China's strategic and economic objectives in Tibet; following the large-scale exploitation of Tibet's mineral and other natural resources under the 'Western Development Strategy', now the 'post-industrial' business of tourism has changed the dynamic of investment, drawing more foreign companies and governments to enter the Tibetan economy, such as international hotel chains, and integrating it with China's.

militarized area of Nyingtri (or Kongpo, Chinese: Linzhi), in the Tibet Autonomous Region, and the construction of the new rail lines bring the Chinese government much closer to the goal set by Mao Zedong over 40 years ago of integrating Tibet with China. The implementation of these elaborate plans heightens Tibetan fears for the survival of their cultural and religious identity.⁴³

A major goal of China's Five-Year Plan, from 2016-2020, is to intensify the build-up of hydropower dams on all the major Tibetan rivers, from which one billion people drink daily.⁴⁴ Cascades of dams are to be built on all the wild mountain rivers; on the upper reaches of the Yangtze and Salween, there are sites for around 100 dams, which are either built, under construction or planned. Other cascades will stem China's last free-flowing international rivers – such as the Mekong and Brahmaputra – which could spark tensions with India and Southeast Asian countries downstream.

On the highest river in the world, the Yarlung Tsangpo (Brahmaputra), the last remaining generator of the enormous Zangmu dam became operational in October (2015),⁴⁵ creating major concern in India. The Zangmu Dam, on a bend of the river around 155 km from Lhasa in Shannan (Tibetan: Lhoka), is part of the Zangmu Hydropower Project and supports a huge 510 MW power station, which became operational in 2014 as the largest hydropower station in Tibet.

Despite Chinese assurances that the dams would not affect the downstream area of the Yarlung Tsangpo,⁴⁶ it has deepened tensions between China and India over capturing the hydroelectric potential of the Yarlung Tsangpo river basin. Prem Shankar Jha, writing for China Dialogue, believes this is inviting calamity: “These plans are engineers’ dreams run amok. If they have their way, up to 360 dams will be built on slopes with a gradient of as much as 60 degrees, at the meeting point of three of the youngest and most unstable mountain ranges in the world. But neither the Chinese nor the Indian government have made even a rudimentary assessment of the impact that gouging out billions of cubic meters of rock and earth to build dams, tunnels and roads, and store millions, in some cases billions, of cubic meters of water, will have on the stability of the earth’s crust in this region.”⁴⁷

Jiao Yong, deputy head of China's Ministry of Water Resources, told a press conference early in 2015 that China planned to build 27 major ‘water conservation’ projects (which refers to damming and water diversion) in 2015, with about half concentrated in western regions, “in an attempt to promote urbanization”. Jiao Yong said: “The amount of investment in major water

43 ICT report, ‘New strategic rail network to Tibet’s borders endangers environment, raises regional security concerns’, November 12, 2014, <http://www.savetibet.org/new-strategic-rail-network-to-tibets-borders-endangers-environment-raises-regional-security-concerns/#sthash.RQ5td6a4.dpuf>

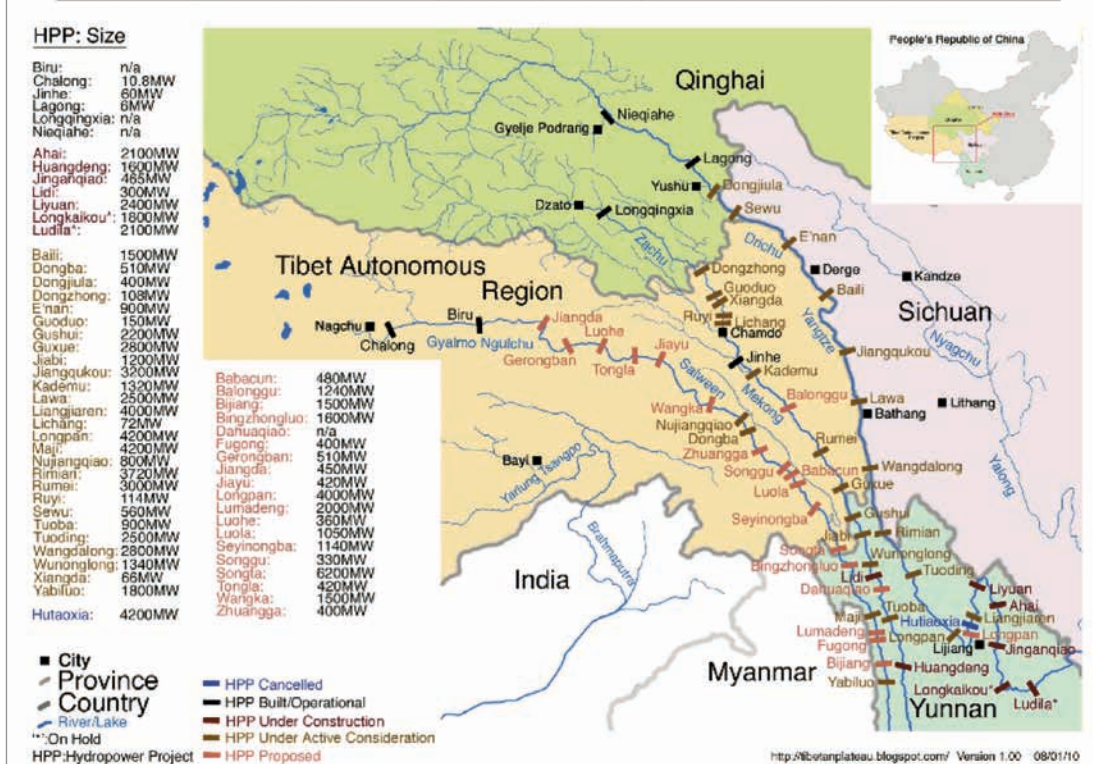
44 Detailed information on dams and three lists of hydropower projects (HPP) in the watersheds of the Driчу (Yangtze), Zachu (Mekong) and Gyalmo Ngulchu (Salween) rivers up until 2013, in the 12th Five-Year Plan period, are provided by expert Tashi Tsering at his blogsite: <http://tibetanplateau.blogspot.co.uk/> Tashi Tsering writes: “As projects in Sichuan, Qinghai and Yunnan are completed, projects in Tibet Autonomous Region will be developed, moving generally from east to west. As these projects get developed, necessary infrastructure will be in place to develop the Brahmaputra River’s the Great Bend area.”

45 “China’s first hydropower dam on Brahmaputra is fully operational”, *HiLight News*, October 13, 2015. Retrieved 19 November 2015.

46 A Chinese Foreign Ministry spokesperson told a press conference on November 24, 2014, that the “ecological power plant” “would not affect the downstream area of the Yarlung Zangpo River.” (<http://finance.eastmoney.com/news/1365,20141126450114748.html> in Chinese).

47 ‘Why India and China should leave the Yarlung Tsangpo alone’ by Prem Shankar Jha, March 5, 2014, <https://www.chinadialogue.net/article/show/single/en/6753-Why-India-and-China-should-leave-the-Yarlung-Tsangpo-alone>

Drichu (Yangtze), Zachu (Mekong), and Gyalmo Ngulchu (Salween) Headwaters Dams



A detailed map of dams on the watersheds of the Drichu (Yangtze) Zachu (Mekong), and Gyalmo Ngulchu (Salween) rivers in the 12th Five-Year Plan period, prepared by Tashi Tsering on www.tibetanplateau.blogspot.com.

conservation projects will be further increased this year, compared with the 488 billion yuan (\$79.74 billion) last year.”⁴⁸ He said that the plans “will help expand China’s domestic demand and support economic growth.” Jiao Yong confirmed that of 17 large hydro projects carried out in 2014, ten were in the western regions of the PRC.

The plans for dam-building have gathered pace in Tibet despite the “model for disaster” set by the massive Three Gorges Dam, the world’s largest hydropower project and most notorious dam, which is on the Yangtze River and tributaries. This massive project sets records for number of people displaced (more than 1.2 million), number of cities and towns flooded (13 cities, 140 towns, 1,350 villages), and length of reservoir (more than 600 kilometers). The project has been plagued by corruption, spiraling costs, environmental impacts, human rights violations and resettlement difficulties. The environmental impacts of the project are likely to get worse as time goes on.⁴⁹ In 2011, China’s highest government body for the first time officially acknowledged the “urgent problems” of the Three Gorges Dam.⁵⁰

Describing the Three Gorges as “a model for disaster” the International Rivers Network stated: “Yet Chinese companies are replicating this model both domestically and internationally. [...] Within China, huge hydropower cascades have been proposed and are being constructed in

⁴⁸ ‘27 water conservation projects planned, half in western regions’, Global Times (in English), April 4, 2015

⁴⁹ Details at International Rivers Network campaign summary: <https://www.internationalrivers.org/campaigns/three-gorges-dam>

⁵⁰ International Rivers Network blog by Peter Bosshard, May 19, 2011, <https://www.internationalrivers.org/blogs/227/chinese-government-acknowledges-problems-of-three-gorges-dam>

some of China's most pristine and biologically and culturally diverse river basins – the Lancang (Upper Mekong) River, Nu (Salween) River and upstream of Three Gorges Dam on the Yangtze River and tributaries.”⁵¹

Damming upstream in Tibet carries great risks, particularly as the plateau is one of the most seismically active areas of the world. Dr Wang Weiluo, an engineer and geographer who is an expert on dam-building at the University of Dortmund, points out the high risks of building dams in high mountain regions like Tibet: “Dam-building raises the water level of the river which increases the pressure of the water on the ground. This raises the number of geological catastrophes especially since the valleys [of the Himalayas] are so young; landslides or rockslides will already increase as has happened in the Three Gorges dam region.”⁵²

Dr Wang Weiluo makes the vivid comparison of the Mohne dam near his university in Dortmund, Germany, which was breached during the Second World War by RAF bombers (the ‘Dambusters’). The resulting floodwave killed at least 1579 people. Dr Wang, whose work is blocked from publication in China according to the German documentary ‘Struggle for Tibet’, said: “Here we see a relatively low dam, which when breached released an eight meter high flood wave. But dams in Tibet which are 400 meters high would result in unprecedented catastrophe if these were to be breached.”⁵³ Prem Shanker Jha writes in China Dialogue: “The death toll from the fracture of even one of these dams would, therefore, run into millions.”⁵⁴

The concentration of dams will be particularly dense on the Jinsha (upper Yangtze) River, where cascades equal to five times the 22.5 GW capacity of the Three Gorges dam are proposed. These dams will not only hold back water flow but also silt, heightening risk of major subsidence in the Yangtze delta and floods around major cities such as Shanghai.

“Hydroelectric power is probably the most disruptive alternative energy source available. Energy-producing dams are essentially in a huge wrestling match with powerful rivers,” wrote Joe McCarthy in Global Citizen. “The rivers want to flow unimpeded, while the dam wants to headlock the water. The ensuing tussle leads to many unintended effects.”⁵⁵

Replacing coal with hydropower may lead to cleaner air for citizens east coast of China, but there is a high environmental price to pay. Chinese environmentalists have called for an urgent halt to large hydro projects, pointing out that the country's rush for dams has already destroyed river ecosystems, fish habitats and raised fears about safety in earthquake-prone regions, but to no avail.⁵⁶

⁵¹ International Rivers Network campaign summary <https://www.internationalrivers.org/campaigns/three-gorges-dam>

⁵² Dr Wang Weiluo was speaking in the film ‘Struggle for Tibet’, a documentary originally shown on German TV, written and directed by: Shi Ming, Thomas Weidenbach for WDR and NDR, in collaboration with Arte. The film won the International Campaign for Tibet-Germany ‘Snow lion’ journalist award in 2014 (<http://www.laengengrad.de/en/produktionen/dokumentationen/tibet.php>)

⁵³ ‘Struggle for Tibet’, a documentary originally shown on German TV, details as above.

⁵⁴ ‘Why India and China should leave the Yarlung Tsangpo alone’ by Prem Shankar Jha, March 5, 2014, <https://www.chinadialogue.net/article/show/single/en/6753-Why-India-and-China-should-leave-the-Yarlung-Tsangpo-alone>

⁵⁵ <https://www.globalcitizen.org/en/content/5-most-powerful-hydroelectric-dams-in-the-world/>

⁵⁶ In 2004, after a major campaign by Chinese environmental groups against damming of the Salween, the then Premier Wen Jiabao intervened and announced that the plans for the Salween would be delayed until more careful environmental and social impact could be assessed. Again in 2009, Wen Jiabao reiterated this stance. But in early 2011, it was quietly announced that the dam cascade would go ahead as originally planned, reversing the suspension. Work at Saige Dam on the Salween is under way. (Michael Buckley on ‘Saving the Salween’, http://www.meltdownintibet.com/f_river_salween.htm).

Michael Buckley, author of 'Meltdown in Tibet', wrote in the New York Times: "This will end badly for the nations downstream from Tibet, which are competing for scarce water. Damming and water diversion could also end badly for China, by destroying the sources of the Yangtze and Yellow Rivers.

"The solution to these complex problems is simple: Since these enormous projects are state-run and state-financed, China's leaders can cancel them at will. Though campaigns by Chinese environmentalists have stopped some dam projects, the pro-dam lobby, backed by Chinese consortiums, is powerful. There are alternatives to disrupting the rivers: China has made great investments in solar and wind power, but has not significantly deployed them in Tibet."⁵⁷

Mammoth water-diversion plan threatens Tibet's ecosystem

It is equally alarming that an elaborate and ambitious plan to divert water away from the upper Yangtze and into the Yellow River is scheduled to begin construction during the 13th Five-Year Plan period.⁵⁸ In what is known as the western route of the massive south to north water diversion project, the Chinese authorities have completed two routes channeling water from the Yangtze far to the north, to parched northern China.

The next step would be to go ahead with a projected third canal –through Tibet - from the Yangtze in the south to the Yellow River in the north. This would traverse the restive Tibetan prefectures of Ngaba (Chinese: Aba), where the current wave of self-immolations began in 2009,⁵⁹ and Kardze (Chinese: Ganzi) in Sichuan province.

The plans were that first the two lowland canals would be dug and blasted, then the entire engineering team would be switched to Tibet, starting in the 13th Five-Year Plan period in 2016. It would entail an influx of Chinese workers and engineers with heavy equipment into remote valleys, involving tunneling through mountains and the canal itself winding around the sides of mountains. It would be likely to take longer than five years and would have an irreversible and devastating impact.

Earlier in 2015, Jiao Yong, deputy head of China's Ministry of Water Resources, was cited in the Chinese official media as saying that he "promised to carefully study the western route of the south-to-north water diversion project that feeds the thirsty Northwest and North China, including Gansu Province and Inner Mongolia Autonomous Region". Consistent with the line taken by the Chinese government that damming and water diversion represent 'conservation',

57 'The Price of Damming Tibet's Rivers' by Michael Buckley, New York Times oped, March 30, 2015, <http://www.nytimes.com/2015/03/31/opinion/the-price-of-damming-tibets-rivers.html> Also see Michael Buckley's website, Meltdown in Tibet, <http://www.meltdownintibet.com/>

58 So far the authorities have not given full details of the content of the Five Year Plan beginning in 2016. More information is likely to be announced in March 2016 at the session of the National People's Congress.

59 The first self-immolation in Tibet in the contemporary era was a young monk from Kirti monastery in Ngaba, Amdo. ICT factsheet on self-immolations in Tibet: <http://www.savetibet.org/resources/fact-sheets/self-immolations-by-tibetans/> and report, 'Storm in the Grasslands: Self-immolations in Tibet and Chinese policy', <http://www.savetibet.org/storm-in-the-grasslands-self-immolations-in-tibet-and-chinese-policy/>

he said that the authorities would be examining the project “with water conservation as a priority.”⁶⁰ Jiao Yong said he was: “confident that the project will play a dominant role in the economic development of northern China.” There is no confirmation yet in official plans of whether it will indeed go ahead; more details may be made public in March 2016, when the CCP hosts the National People’s Congress in Beijing.

In an analysis of this mammoth water-diversion project, Gabriel Lafitte refers to changes in China’s domestic politics since the Three Canal South-to-North Water Transfer project was first announced, saying that: “Users of the Yangtze River, all the way down to Shanghai and the sea, are increasingly protective of their river, and don’t want any more of it diverted, and the downstream provinces carry enormous clout. [...] Another reason against this third canal ever being built is that the water, after flooding the richest wetland meadow pasture in Tibet, at Dzoerge, will flow through the upper Yellow River, with water available to upper river provinces such as Gansu and Ningxia, maybe as far downstream as Inner Mongolia. But they will grab all the benefits, there won’t be enough flow for the more politically powerful provinces further downriver, including the heartland of China’s coal and coal-fired electricity industry, plus Beijing itself.”⁶¹

But Lafitte also points out that the new wave of industrialization currently taking place in Xinjiang (East Turkestan), directly to the north of the Tibetan plateau, is a factor that could tip the balance towards the third canal which, if big enough, could divert water not only eastwards to Gansu and further down the Yellow River, but also north and west in Xinjiang. “Many aluminium smelters are being built, reliant on electricity generated by new coal and gas burning power stations using the abundant fuel supplies of Xinjiang and which China imports, via Xinjiang, from Kazakhstan to the west,” Lafitte writes in the same article. “There is only one thing missing in Xinjiang, and that is water. Much of Xinjiang is desert, its towns traditionally clustered around oases. Coal fired power stations need cooling towers that use a lot of water, likewise aluminium smelting and other major heavy industries under construction in Xinjiang will all need lots of water.”

The rush to exploit Tibet’s water: bottling the glaciers

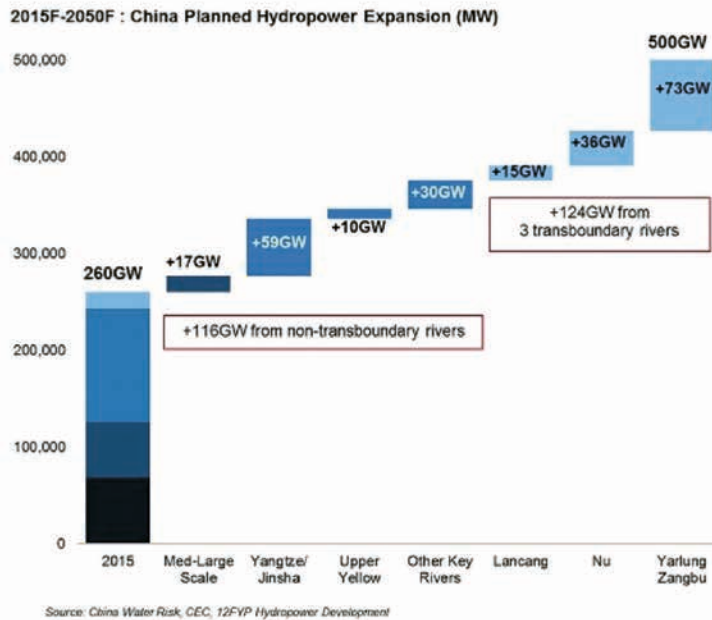
The rush to exploit Tibet’s water resources involves both central and provincial authorities working with major, powerful state-owned corporations. Both the mega-dams and bottling water direct from Tibet’s glaciers are now a high political priority for the Chinese authorities, and in particular the TAR government.

Despite shrinking glaciers and the impact that exploitation of precious resources would have on neighboring countries, the provincial authorities in Tibet and state-owned businesses are pushing ahead with a massive expansion of the bottled water industry.

⁶⁰ ‘27 water conservation projects planned, half in western regions’, Global Times, April 1, 2015, <http://english.sina.com/china/2015/0331/797168.html>

⁶¹ ‘Water, water everywhere’, blog by Gabriel Lafitte posted on January 16, 2015, <http://rukor.org/water-water-everywhere/>

Massive planned expansion of hydropower, almost entirely from Tibetan rivers



This diagram by China Water Risk shows the massive planned expansion of hydropower in China, mainly from Tibet’s rivers. Courtesy Gabriel Lafitte.

In November (2015), the TAR authorities announced a new ten-year plan to expand the bottled water industry, with its target of building 5 million cubic meters of bottled water production capacity by 2020.⁶²

“The Tibetan water tower cannot support all the damming and the extracting that is taking place right now,” said Jennifer Turner, director of the China Environment Forum at the Woodrow Wilson International Center in Washington. “Bottled water doesn’t have nearly the impact that dams and water-intensive industries do, but it’s another big drop being taken out of the bucket.”⁶³

Several powerful Chinese corporations recently visited the plateau, including the Three Gorges Corporation - believed to have close ties with former premier Li Peng⁶⁴ - as well as Sinopec Group, China National Gold Group and Nongfu Shanquan and Guangming Food Group, to sign 16 agreements over drinking water supply.⁶⁵ \$407 m (2.6 bn yuan) worth of deals were signed with investors and the TAR authorities, which reported that sales of drinking water had risen by 200% and that there was an intention to turn the “natural drinking water” business into a “pillar industry”.⁶⁶

62 Chinese state media report, November 1, 2015, in Chinese: http://www.xzwx.com/xw/xzyw/201511/t20151101_892883.html

63 ‘China Is Tapping Tibetan Glaciers to Meet Growing Demand for Bottled Water’, by Matt Smith, November 14, 2015, <https://news.vice.com/article/china-is-tapping-tibetan-glaciers-to-meet-growing-demand-for-bottled-water>

64 ‘Former top officials from China Three Gorges Corporation moved to new posts’, April 6, 2014, <http://www.scmp.com/news/china/article/1465944/former-top-officials-china-three-gorges-corporation-moved-new-posts>

65 State media report, January 19, 2015, <http://www.chinanews.com/sh/2015/01-19/6982702.shtml>

66 State media report in Chinese, September 25, 2015: <http://xz.people.com.cn/n/2015/0925/c138901-26528733.html>

It is notable that this development does not refer to the provision of safe drinking water for the general population but the sale of bottled water. Since early 2015 the Sinopec Group has sold glacier water bottled from Tibet in its 23,000 petrol stations and convenience stores across China.

China Water Risk researcher Liu Hongqiao wrote in China Dialogue: “Water bottled upstream among snow-capped peaks is [...] perceived as pure, commanding a premium. This has led to a huge influx of companies hoping to cash in on the region’s water resources. Though it only makes up a very small proportion of China’s annual bottled water production, such premium water is seen as the new point of growth for the country’s booming bottled water industry.”⁶⁷

Jennifer Turner from Woodrow Wilson International Center noted that the Chinese central authorities may need to be prepared to “dial back the Tibetan spigot”, saying that Chinese leaders know they have to improve the efficiency of all their major systems for their new prosperity to be sustainable, and bottled water “is not a very efficient way to be using water. There’s already a disconnect between the goals of the Tibetan authorities and officials in the central government, which appears ready to set reduced quotas. Mismatched central and provincial policies add to the industry’s uncertain future. We expect the government to move to re-align such mismatched policies in the future, which will impact the industry.”⁶⁸

Construction of dams in Tibet involves major state-owned enterprises that rely on Party connections to do business. Four major corporations have been detailed in state media reports for their involvement with building the dams, detailed as follows: the Huaneng Corporation Group (one of the five largest state-owned electric utility enterprises in China, administrated by the State Council of the People’s Republic of China, and the first Chinese power producer to join the ranks of Fortune 500 Companies, ranking 224th in 2015); the Huadian Corporation Group; Datang Corporation (one of five large-scale power generation enterprises in the People’s Republic of China, established on the basis of former State Power Corporation of China in 2002)⁶⁹ and China Guodian Corporation.⁷⁰ Just as nomad displacement from ancestral pasturelands is carried out in the name of ‘conservation’ according to Chinese official representations, so these huge and potentially catastrophic dam projects are characterized as ‘water conservation’ projects in the state media and to Tibetan people.

An account of a meeting with some of the Tibet Autonomous Region leadership and local farmers in Tibet Daily on November 22 (2015) aligned the construction of hydro-power dams with the political objectives of “uniting the people” and allegiance to the Communist Party. It stressed the importance of the hydropower projects as an essential element of implementing the vision of Party Secretary and President Xi Jinping following the Fifth Plenum and setting of the 13th Five-Year Plan.⁷¹

67 A report by China Water Risk details how bottled water is threatening China’s groundwater and Asia’s glacial watersheds. <http://chinawaterrisk.org/notices/bottled-water-in-china-boom-or-bust/#sthash.2DVlxmps.dpuf>

68 <https://news.vice.com/article/china-is-tapping-tibetan-glaciers-to-meet-growing-demand-for-bottled-water>

69 The South China Morning Post reported in June (2015) that Li Peng’s daughter Li Xiaolin had been made Vice-President of the company. (SCMP, June 9, 2015)

70 The websites of the companies are as follows: <http://www.chng.com.cn/eng/>; <http://www.chd.com.cn/>; <http://www.china-cdt.com/dtwz> and <http://www.cqdc.com.cn>.

71 Tibet Daily, November 22, 2015, <http://www.mzb.com.cn/html/report/160136173-1.htm> (in Chinese).

As Brahma Chellaney points out, it was under Mao that the large-scale uprooting of local residents to make way for major water projects began – a trend that has not only persisted to this day but has become more common. The world’s biggest megadam, the Three Gorges, was also Mao’s brainchild. “China has always had this history of mega-projects,’ Huang Yukon, an economist and senior associate at the Carnegie Endowment for International Peace, a think tank based in Washington, was cited as saying in the New York Times. “It’s part of the blood, the culture, the nature of its society. To have an impact on the country, they’ve got to be big.”⁷²

There is strong sympathy – and activism in NGOs - among many Chinese for the preservation of the Tibetan plateau, despite the dangers of such support. Well-known author Zhang Yihe said in a message on social media “I don’t understand why we have to dig up gold in areas that are above 4,000 meters. Why must we also build dams on rivers, including the Yarlung Tsangpo? Why don’t we leave something for the next generation?” In a widely quoted Sina Weibo post, television director Zhang Ronggui said he was ‘strongly opposed to the development of heavy industry and mineral resources in Tibet. [...] It is the world’s highest and purest holy land, and I hope the government can leave a blue sky, clean water and white clouds for the next generation,’ he wrote.”⁷³

The great water meadow of Dzoegé and climate change

Gabriel Lafitte assesses the significance of plans for a remote wetland in Tibet, as an example of why global warming is dangerously out of control. This is an edited version of a blog posted on <http://rukor.org/global-climate-change/> on July 23, 2015.

Great rivers have their own logic, seldom suited to the categories and economies of the modern world. China’s great rivers, the Yellow and Yangtze, rise close to each other, in glaciers on the slopes of Tibetan mountain ranges, before making their way across the vast grasslands of the Tibetan Plateau, before plunging to the lowlands.

[...] The Yellow River (Huang He in Chinese, Ma Chu in Tibetan) meanders through the sward of Tibet, along the southern flanks of the sacred Amnye Machen mountain range and then fans

⁷² Giving broader context in the same article (New York Times, January 12, 2015), David Barboza wrote: “Such enormous infrastructure projects are a Chinese tradition. From the Great Wall to the Grand Canal and the Three Gorges Dam, this nation for centuries has used colossal public-works projects to showcase its engineering prowess and project its economic might. Now, as doubts emerge about the country’s three-decade boom, China’s leaders are moving even more aggressively, doubling down on mega-infrastructure. Whether China really needs this much big infrastructure — or can even afford it — is a contentious issue. The infrastructure plans run counter to Beijing’s commitment to reduce its heavy reliance on government-led investment to fuel growth. And some economists worry that the country might eventually be mired in enormous debt.” January 12, 2015, http://www.nytimes.com/2015/01/13/business/international/in-china-projects-to-make-great-wall-feel-small.html?_r=1

⁷³ Gabriel Lafitte blog, chinadialogue.net, April 4, 2013. It is beyond the scope of this report to track intensifying interest among Chinese citizens in Tibet’s environment, but a new book by one of the most prominent Chinese writers on the environment, Liu Jianqiang, about his encounters and friendships with Tibetan environmentalists including Karma Samdrup and his two brothers, is an essential read. ‘Tibetan Environmentalists in China: The King of Dzi’ by Liu Jianqiang, translated by Ian Rowen, Cyrus K Hui and Emily T Yeh, to be published in December 2015, details at: <https://rowman.com/ISBN/9780739199732/Tibetan-Environmentalists-in-China-The-King-of-Dzi#>. ICT report on the imprisonment of Karma Samdrup, ‘A sharp knife above his head’: the trials and sentencing of three environmentalist brothers in Tibet’, August 4, 2010, <http://www.savetibet.org/a-sharp-knife-above-his-head-the-trials-and-sentencing-of-three-environmentalist-brothers-in-tibet/#sthash.e9QZ3VTH.dpuf> Also see ChinaDialogue.net and ICT’s report ‘Tracking the Steel Dragon’, <http://www.savetibet.org/wp-content/uploads/2013/03/TrackingTheSteelDragon.pdf>.

out into a huge water meadow known as Dzoerge (Zoige or Ruo'ergai in Chinese). The story of this remote wetland is the whole story of why global warming is dangerously out of control. Dzoerge is these days the remote intersection of three Chinese provinces: Gansu, Sichuan and Qinghai, peripheral to all of them, abused, neglected, drained, dried out, over-engineered, officially protected yet neglected and even due to become the terminus of a megaproject to permanently flood it with water diverted by canal from the Yangtze to the Yellow River. Instead of carefully restoring this great wetland, and restoring its capacity to filter and clean the waters, to hold and release waters year-round, like a sponge, China is now planning to go from the extreme of draining and drying Dzoerge, to the opposite extreme of drowning it.

As China prepares its 13th Five-Year Plan, set to run from 2016 to 2020, a key decision is whether to proceed, as announced over a decade ago, with dams across the Tibetan tributaries of the Yangtze, linked to a canal and massive pumping stations to send Yangtze water to the Yellow at Dzoerge. Officially called the south-to-north water transfer project's western route, the flow would permanently inundate the whole Dzoerge district, its Ramsar treaty protected wetlands, migratory waterbird sanctuaries, peatlands and fertile pasturelands, in the name of providing lowland Chinese cities and industries with water. It would reduce environmental flows down the Yangtze, a heavily exploited river that needs all its strength to flush pollutants out. The south-to-north water transfer project, if it goes ahead, will remove the carbon capture capacity of Dzoerge, transforming it from a carbon sequestering peatland to an acidic pondage of mega proportions, from carbon sink to carbon source. The designated canal route is uphill, requiring massive pumps, which will either be fossil fuelled, adding more greenhouse gases, or hydropowered by building yet more massive concrete walls across the wild mountain rivers of eastern Tibet.

If the Dzoerge water meadow goes from desiccation to inundation it will be the final insult to an area modern China just can't let be. Revolutionary China, from the start, saw Dzoerge as an abomination, a mixing of two categories that modernity requires be kept separate: water and land. China was unable to see Dzoerge as its pastoralists see it: as a production landscape rich in all that is needful for livestock, medicinal herb gathering, and good livelihoods. The mingling of land and water transgressed the requirements of modernity: that roads have firm foundations, rivers have clear margins, waters flow as fast as possible without impediment, land be firm underfoot and not boggy.

The very first encounter between the Chinese Communist Party and Dzoerge was a disaster, that has been endlessly remembered as the worst time of the Long March of 1936 as the communist armies fled deep inland, only to be sucked into the swamps of Dzoerge, with many men lost, and many more picked off by Tibetan nomad marksmen. Not knowing how to walk from clump to clump of hardy sedges, the heavily laden soldiers of the People's Liberation Army disappeared into the mud, a suffering relayed endlessly ever since as proof of their heroic sacrifice. Dzoerge, even to Han Chinese unfamiliar with the name, is synonymous with patriotic revolutionary sacrifice. [...]

Yet this same landscape evokes in Tibetans lyrical imagery of a naturally bountiful area of rich pastures, luxuriously meandering rivers, fat cattle, endless wildflowers in summer, and much leisure time in winter to attend to matters beyond the immediate concerns of this life.



This shows a nomad settlement camp in Lithang (Chinese: Litang), Sichuan, the Tibetan area of Kham. A number of those who have self-immolated in Tibet since 2009, an act emerging from the anguish of oppression and displacement, have been Tibetan nomads.

Among Chinese too, despite the master narrative of horror, other reactions occur. The essayist and documentary maker Sun Shuyun writes: “The pasture has a strange beauty, this vast flat expanse, as if you are looking into the heart of infinity, and then huge carpets of meadow flowers, yellow, white, blue, vermilion, violet, purple, like announcements of heaven. Your eyes ache from the brilliant colours, and their fragrance makes you smile.”⁷⁴

Two decades after the Long March Dzoerge was pacified by the PLA and the work began of making a man-made landscape in which land and water were properly separated, which meant digging ditches through the peatlands to drain the waste land, its official classification. Much of the drainage work in the revolutionary years was done by hand, by the compulsory labor of Tibetans being punished for their reactionary class consciousness, as counter-revolutionaries. Many were worked to death.

As the water meadows drained and the water table dropped, thousands of years of accumulated organic matter, the seven billion cubic meters peatland store of carbon taken from the atmosphere also dried, and then burned. The fires smouldering underground were almost impossible to extinguish, their smoke a major source of atmospheric pollution. Only 20 per cent of the Dzoerge wetland is intact.⁷⁵[2]

The drying of the wetlands of Dzoerge came on top of a drying phase affecting the whole Tibetan Plateau over thousands of years, leading to a steady drop in lake levels across Tibet, that has been much studied scientifically.

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74 Sun Shuyun, *The Long March*, Harper Collins, 2007

75 Schumann, M; Thevs, N; Joosten, H (2008) Extent and degradation of peatlands on the Ruergai Plateau (Tibet, China) assessed by remote sensing. In *Proceedings of the International Peat Congress*, Tullamore pp 77–80

The United Nations Development Programme (UNDP) describes what happened: “Thousands of drainage holes scar the otherwise flawless landscape of China’s Ruoergai wetlands, constituting the single most serious threat to its high mountain peat-lands. These drainage holes have contributed to massive soil and water erosion, greatly reducing the wetlands. In fact, one lake has already shrunk by a third. For the people in the Sichuan and Gansu Provinces who rely on these peat lands for a remarkable array of products, including fish, rice, medicinal plants, peat for fuel and garden soil, and grasses and reeds for making paper and baskets, these holes, leftover from an attempt during the 1960s to transform the region into grasslands, pose a serious threat to their livelihoods.”⁷⁶

Then, in the 1990s, China began to catch up with the world climate debate, and took steps to rectify some of the damage. Dzoegé became Ramsar site number 1731, covering a modest portion of the huge wetland. It is also on the World Database of Protected Areas as site #315726.

The world has a global treaty specifically to protect wetlands, the Ramsar Convention, which most recently held a meeting of all signatory governments, including China, in 2015. The Convention singled out China for its: “low level of awareness of the value of wetlands and the ecosystem services they provide, so that the government is unable to make wetland friendly decisions.”⁷⁷ China reported to the Ramsar Convention that: “Compared to that of the 2003 first national wetland survey, the result of the 2013 second survey illustrated that China lost an estimated of 3,376,200 ha of natural wetlands over the past decade, representing an average annual 9.33 percent loss of its wetlands.”⁷⁸

China was asked how it involves stakeholders in planning and running Ramsar sites. The official reply was: “Active engagement and support of all stakeholders have proved the secret to sustain wetlands. Over the past three years, the stakeholders that care about wetlands contributed to the promulgation of a series of wetland-related regulations, bylaws, plans, policies, and business practices.” But what does China mean when it talks of stakeholders? The only stakeholders named are departments of government: “The State Forestry Administration sent the draft of Regulations on Wetland Protection to over 20 state sectors for review, and is working out a new version by integrating the collected review feedback.”

[...] The official definition of Dzoegé [in the Ramsar global system], provided the UN by China’s officials, makes no mention of the revolutionary policy of draining the Dzoegé wetland, which makes it easier, as happens elsewhere in Tibet, to attribute much of the blame to nomads, who are then forbidden to graze, in the name of wetland restoration. Now, in the name of conservation, those who have always cared for this fragile mingling of waters and lands are often excluded, as the UN Environment program reported in 2010: “The UNDP project, which began in 2007, has introduced innovative techniques and methodologies to Ruoergai County to help combat such drainage. Some of the techniques include strictly controlling wetland use, placing moratoriums on animal grazing and seeding to restore grasslands.”⁷⁹

76 Restoring crucial Chinese wetlands will help preserve livelihoods, UNEP press release, 23 November 2010

77 http://www.ramsar.org/sites/default/files/documents/library/cop12_doc12_summary_asia_e.pdf

78 http://www.ramsar.org/sites/default/files/documents/2014/national-reports/COP12/cop12_nr_china.pdf p.19

79 Restoring crucial Chinese wetlands will help preserve livelihoods, UNEP press release, 23 November 2010

These scientists, from lowland Chengdu and Nanjing also blame the Tibetan pastoralists: “Stockbreeding has developed at a high speed in the Zoige Marsh area since the 1970s, resulting in a serious conflict between livestock populations and pasture lands. [...] Overgrazed and trampled by these livestock, the pasture lands are hard to regenerate naturally and recessive succession is unavoidable.”

This tendency to blame the victims of wetland degradation as the cause, complicates efforts towards solutions that help heal not only the 7000 sq kms of Dzoeye wetland, but also the planet. Much is at stake. When this great wetland dries, it releases the main greenhouse gas, carbon dioxide to the atmosphere, but the 750 megatonnes of peat in Dzoeye also release methane as it dries up, and methane is a much more dangerous gas, much more potent in its effects on atmospheric temperature than carbon dioxide. So it is important that China quickly rehabilitates Dzoeye, gets the pastoralists on side as partners in the actual work of repair and biodiversity protection, and stops blaming the victims. But Dzoeye is far from restored, and the great threat facing it is the south-to-north water diversion western route project.

For the sake of the planetary climate, Dzoeye must be protected, not by engineering but by involving the local communities of Tibetan pastoralists as active partners. Dzoeye will not be saved, nor the planet, by removing nomads in the name of conservation. Exclosure is not the solution, it only worsens the injury.

Dzoeye’s chances of restoration aren’t helped by the discovery, 40 years ago by Chinese geologists, of a uranium deposit described in scientific journals as having “gained much attention of many geologists and ore deposit experts due to its scale, high grade and abundant associated ores.”⁸⁰

In today’s China, Dzoeye must work for its keep, must generate income somehow if it is to be restored, spared uranium mining and not inundated. The conventional wisdom these days is that it will be tourism that will save Dzoeye. This requires airbrushing out the Long March, the draining of the peatlands, instead repurposing Dzoeye as a natural unspoiled romantic wilderness. The English language version of the glossy popular travel magazine CNG (China National Geography, its resemblance to National Geographic not coincidental) in 2009 gushed about Dzoeye: “Serenity in the highlands, a Miracle created by the Tibetan Plateau and Yellow River”, with 12 pages of lush supersaturated colour photos.

Maybe one day Dzoeye’s water meadows will breathe free again, and the Tibetan pop videos⁸¹ celebrating Dzoeye’s grassland will be more than an evocation of a disappearing past.

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80 ‘New Evidence for Genesis of the Zoige Carbonate-Siliceous-Pelitic Rock Type Uranium Deposit in Southern Qinling: Discovery and Significance of the 64 Ma Intrusions’ by SONG Hao, ZHANG Chengjiang, NI Shijun, XU Zhengqi and HUANG Changhua; ACTA GEOLOGICA SINICA (English Edition) Vol. 88 No. 6 pp.1757–1769 December 2014

81 A reference to the well-known popular singer Yadong, who paid tribute to the beauty of the Dzoeye natural landscape in this song, released in Tibet: <https://www.youtube.com/watch?v=WW-pMoDNtPo>



Top: A nomad on horseback amid grasslands that are being fenced in eastern Tibet. Image: ICT

Bottom: A roll of wire to fence grasslands near a traditional nomad tent. Image: ICT

Part Four: The ‘contradiction between grass and animals’: nomadic pastoralists and official policy

“As the world contemplates a Paris climate accord we pose questions whose answers may not be what you expect. How much longer can our melting Tibetan glaciers feed year round the great rivers of Asia? The thousands of kilometers glacier-fed rivers traverse the Tibetan pasture lands before plunging to the lowlands are not threatened by grazing, but sustained by intelligent, flexible, mobile light grazing herds, wild and domestic. Those pastures filter, clean and regulate the flow, as well as sustaining an extraordinary diversity of medicinal herbs and nutritious grasses.”

– **Tsering Tsomo, Director of the Tibetan Center for Human Rights and Democracy, who is from a Tibetan nomad family. Her first person account is included in this report.**

For centuries, Tibetan nomadic herders have made a sustainable living uniquely adapted to the harsh conditions of the Tibetan plateau. Tibetan nomads live with their herds on the plateau, migrating with their herds of yak, sheep and goats according to the seasons of the year, and producing wool, butter, cheese, yogurt and meat. But the implementation of Chinese policies to settle Tibetan nomads, and to resettle Tibetans in towns and villages, threatens the survival of a way of life that is integral to Tibetan identity as well as the survival of the rangelands and Tibet’s biodiversity.

Since the beginning of the ‘Western Development Strategy’ in 1999–2000, the Chinese government has been implementing policies of settlement, land confiscation, and fencing of pastoral areas inhabited primarily by Tibetans, dramatically curtailing their livelihood. Thousands of Tibetan nomads have been required to slaughter their livestock and move into newly built housing colonies in or near towns, abandoning their traditional way of life.

In the last two years, these policies have been dramatically accelerated, with the Chinese government claiming that it will have moved the remaining 1.2 million herders into towns by the end of this year.⁸²

⁸² ‘China Fences In Its Nomads, and an Ancient Life Withers’, by Andrew Jacobs, New York Times, July 11, 2015, http://www.nytimes.com/2015/07/12/world/asia/china-fences-in-its-nomads-and-an-ancient-life-withers.html?_r=0

In a disturbing development, the Chinese government frames its policy of settlement of nomads as ‘conservation’ and protection against the impacts of climate change. Most of the nature reserves and national parks in China are on the Tibetan Plateau, giving China credentials as a carbon capturer. This effectively locks up much of Tibet, including the best pasture lands of Kham and Amdo as water supply and carbon capture areas, from which nomadic pastoralists are excluded.

According to online interface for the World Database on Protected Areas (WDPA), ProtectedPlanet.net,⁸³ most of China’s officially protected areas are on the Tibetan Plateau, some in arid areas of alpine desert, but much in the pasture lands of Tibet, including the entire prefectures of Golok (Chinese: Guoluo) and Yushu in Qinghai, where nomad settlement into concrete enclaves is well advanced. Qinghai Province, including Golok, led the way in insisting on fencing and sedentarization.

Across Tibet, grasslands cover about 68% of the 1.22 million square kilometers of the TAR, as well as slightly more than 50% of Qinghai Province’s 720,000 square km, and vast swathes of western Sichuan and Gansu Provinces and northwestern Yunnan Province, totaling some 1.7 million square km (420 million acres; 656,000 square miles).⁸⁴

Excluding nomadic pastoralists is a way that China is now credited by some in the international community in tackling climate change – through nature reserves and national parks that on paper exclude human use. In a blog posted in advance of the Paris climate change talks, Gabriel Lafitte wrote: “On a map, this looks like an impressive commitment to grow more grass and sequester more carbon, offsetting all those coal fired emissions. On the ground, for hundreds of thousands of pastoral nomads, it means total loss of livelihood, herded off their land into concrete barracks often far from their lands, their herds compulsorily sold, with no training to enter the modern cash economy of wage labour.”⁸⁵

While on paper creating National Parks in China may seem like an effective means of conserving the environment, and therefore appealing to international institutions to support,⁸⁶ it also makes grazing bans permanent, and involves the exclusion of nomadic pastoralists. China has specifically declared three Qinghai counties, sources of the Yellow, Mekong and Yangtze rivers, to be national parks.

This is despite a strong consensus among Chinese and foreign rangelands experts that settling nomads runs counter to the latest scientific evidence on lessening the impact of grasslands degradation, which points to the need for livestock mobility in ensuring the health of the rangelands and mitigating negative warming impacts.

⁸³ www.protectedplanet.net is the online interface for the World Database on Protected Areas (WDPA), a joint project of IUCN and UNEP, and the most comprehensive global database on terrestrial and marine protected areas.

⁸⁴ ‘Searching for grass and water: Ecosystem sustainability and herders’ livelihoods in western China’, Daniel J. Miller, 2007, paper kindly supplied by the author.

⁸⁵ Posted on July 30, 2015, <http://rukor.org/gearing-up-for-paris/>

⁸⁶ The Paulson Institute, founded in 2011 by former U.S. treasury secretary Henry Paulson, has recently announced it will work with China to set up National Parks in Qinghai, Yunnan and elsewhere. In Qinghai this will almost certainly be in areas where nomads are being removed. Xinhua news report, June 8, 2015, http://news.xinhuanet.com/english/2015-06/08/c_134308232.htm?utm and <http://www.paulsoninstitute.org/news/2015/06/08/paulson-institute-and-national-development-reform-commission-launch-collaboration-on-national-park-system-development-in-china/>



The majority of Tibetans live in rural areas, and for centuries many have sustained themselves through a nomadic herder lifestyle, uniquely adapted to the harsh conditions and fragile ecosystem of the Tibetan plateau. But the implementation of Chinese policies to settle Tibetan nomads, and to resettle Tibetans in towns and villages, are now threatening the survival of a way of life that is integral to Tibetan identity as well as the livelihoods of Tibetan nomads. This means that one of the last examples in the world of sustainable pastoralism now faces extinction unless there is urgent change. Often the new settlements, like this one, are far from community resources. The images depict a nomad settlement near Golmud in Qinghai, where the railway runs to Lhasa, at the beginning of construction, with the second picture showing construction six months on.

“It has taken 50 years of China’s statist interventions in the grasslands of the Tibetan Plateau to reach the current crisis, in which hundreds of thousands of pastoralists are being removed from their ancestral pastures, in the name of conservation and objective scientific necessity,” the Tibetan Center for Human Rights and Democracy reported in a major study of Tibetan nomads published this year.⁸⁷ “China says grazing bans, pasture closures and nomad removals are an objective scientific necessity in order to grow more grass, capture carbon and protect watersheds.

“China has failed to enlist the time and knowledge of the pastoralists to do the landcare work of rehabilitating degrading areas, relying instead solely on enclosure and time to achieve rehabilitation. This is contrary to experience worldwide in community based landscape restoration, which relies on local communities to lead the recovery process. [...] The accelerating exclusion of pastoralists originates in successive policy failures.”

However, in a new development, an increasing number of Chinese professors and rangelands experts have become increasingly critical of government policies, arguing that a series of policy mistakes has caused the overgrazing and degradation – not the nomadic pastoralists themselves.

The TCHRD report on nomadic pastoralism in Tibet cites no less than 243 research reports published in China documenting scientific findings that no longer confirm the dominant official discourse by the Chinese leadership.

Li Wenjun, a professor of environmental management at Peking University, is one of those voices; she found that resettling large numbers of pastoralists into towns exacerbates poverty and worsens water scarcity. In published studies, she has said that traditional grazing practices benefit the land. “We argue that a system of food production such as the nomadic pastoralism that was sustainable for centuries using very little water is the best choice,” according to a recent article she wrote in the journal *Land Use Policy*.⁸⁸

The global climate change crisis is at the heart of this new paradigm, given that the pastoral grasslands of the world, including the Tibetan Plateau, provide ecosystem services that are not improved by banning grazing.

TCHRD states: “The alternative future scenario is of a paradigm shift to a pro-pastoralist understanding of grassland dynamics and the skillful mobility of the pastoralists as the key to resolving problems of degradation, productivity and landscape protection.”⁸⁹

The dominant discourse, which is the Beijing leadership’s intent to end the nomadic lifestyle, imposed from the top down, applies throughout the PRC. In Inner Mongolia it has been pursued

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⁸⁷ ‘Wasted Lives: A Critical Analysis of China’s Campaign to End Tibetan Pastoral Lifeways’, May 2015, Tibetan Center for Human Rights and Democracy, <http://www.tchrd.org/wp-content/uploads/2015/05/Download-Report.pdf>

⁸⁸ ‘Solving one problem by creating a bigger one: The consequences of ecological resettlement for grassland restoration and poverty alleviation in Northwestern China’ by Mingming Fan, Yanbo Li, Wenjun Li, Volume 42, January 2015, Pages 124-130 <http://www.sciencedirect.com/science/article/pii/S0264837714001586> cited in New York Times, July 11, 2015, ‘China Fences In Its Nomads, and an Ancient Life Withers’, http://www.nytimes.com/2015/07/12/world/asia/china-fences-in-its-nomads-and-an-ancient-life-withers.html?_r=0

⁸⁹ TCHRD, ‘Wasted Lives’, *ibid.*

since the 1950s.⁹⁰ Kazakh nomads in northern areas of the Xinjiang Uyghur Autonomous Region (XUAR) were the subject of settlement policies instituted in the late 1980s, with over 80% of Kazakh pastoral families settled by 2000.⁹¹

In Tibet, there is an added political dimension, as the policies have been linked in the TAR to the Party's political objectives of maintaining 'stability' and countering the Dalai Lama's influence.

The former TAR Party Secretary Zhang Qingli said: "[Farmers and nomads] 'living and working in peace and contentment' is the fundamental condition for us in holding the initiative in the struggle against the Dalai clique."⁹² His comments apparently reflect the authorities' view that if Tibetans become richer, their faith in religion and the Dalai Lama will fade.⁹³ This has not happened in Tibet. It also indicates the official line of ensuring political 'stability' through countering 'separatism' through development.

A Tibetan former nomad now living in the West told ICT that he believes this to be a key element of the Party's policies on nomad settlement, saying: "Nomads remain beyond the reach of the state. Their economic self-sufficiency, mobility and traditional and religious outlook on life make them the most difficult people to integrate into the Chinese state."

The ethos of the Western Development Strategy is to create conditions that will encourage poor rural workers to towns or cities, where they will apparently become workers and consumers in a new, 'modern', economy. The policies also give the authorities greater administrative control over people's movements and lifestyles.

Resettlement policies are generally implemented without consultation or consent, and local people have no right to challenge them or refuse to participate. The distinction between coercion and consent of nomad settlement is meaningless in the political climate in Tibet today. This is despite the fact that Chinese law requires that those who are to be moved off their land or are to have their property confiscated must be consulted, and, if they are moved, compensated for their losses.⁹⁴

90 See for example: 'Let grass grow over it: overgrazing of grass steppe in Inner Mongolia', Breuer, L., Archer, N., Schneider, K., Huisman, J., Frede, H. G., *Spiegel der Forschung*, 2004 (Vol. 21) (No. 1/2), pp. 86-91.

91 See for example: 'Kazakh nomads, rangeland policy and the environment in Altay: insights from new range ecology', Tony Banks and Serik Doman, paper presented at the Second International of Asia Scholars, Free University, Berlin, August 9-12, 2001, available at: www.eldis.org

92 Cited in ICT report, 'Tracking the Steel Dragon', <http://www.savetibet.org/wp-content/uploads/2013/03/TrackingTheSteelDragon.pdf>

93 This emerges from a position first established by Mao Zedong, who believed that as society became more advanced under the Chinese Communist Party (CCP), religious belief would eventually wither and die. Mao once said: "It is the peasants who put up idols, and, when the time comes, they will throw the idols out with their own hands. [...] It is wrong for anybody else to do it for them." According to the CCP's Marxist, atheist ideology, religion is a superstitious and unscientific product of natural and social oppression; it has been exploited and used in backward societies as a tool by ruling classes to suppress the people and preserve social inequality. According to this Marxist materialist worldview, religion will disappear in a socialist society. Practical measures to handle religion in Tibet have varied from differing degrees of tolerance to persecution of practitioners. For further details, see Chapter 1, "The Politics of Religion", in the ICT report, 'When the Sky fell to Earth: The new crackdown on Buddhism in Tibet', available at: www.savetibet.org

94 Articles 41 and 111 of China's Constitution guarantee the right to consultation, as does the 1989 Administrative Procedure Law (see Articles 2 and 9 of the 1989 Administration Procedure Law). This law and the 1986 General Principles of the Civil Law of the PRC also stipulate compensation for property seized illegally. The 1998/1999 Land Administration Law spells out the process by which property can be requisitioned, processes by which compensation should be paid, and amounts. According to Human Rights Watch, "Indications are that [these] are rarely followed". 'No one has the liberty to refuse: Tibetan herders forcibly relocated in Gansu, Qinghai, Sichuan and the Tibet Autonomous Region' report by Human Rights Watch, June 2007, www.hrw.org.

Chinese scholars have noted the lack of legality surrounding the settlement of nomads, stating that the policies have been marked by “insufficient legal involvement”, “a lack of legal knowledge from all the parties”, and that “government departments have an insufficient knowledge of the law”.⁹⁵ Some nomads are offered compensation packages when they are settled. For some, with no rangeland and negligible job prospects, their main concern is how long the compensation package will last. Many of the payments are insufficient; Human Rights Watch quoted a former Tibetan nomad who had escaped into exile from Machen (Chinese: Maqin) County in Golok Prefecture in Amdo as saying: “They didn’t give food or money allowance. Relocated families complain that their life is hard because now they have to buy everything, even meat and dung fuel for the stove.”

Dr Katherine Morton, who is researching climate change and transboundary water security across the Himalayan-Hindu Kush, also cautions against blaming nomadic pastoralists for the degradation of the grasslands and impact of climate change. Dr Morton, who has conducted research on the impacts of climate change on the Tibetan Plateau and its implications for regional security, writes: “A major problem is that we still do not know enough about climate impacts on the grasslands. Field investigations are few and far between. What we do know is that a simple causal relationship between overgrazing and environmental degradation – a ‘Tragedy of the Commons’-style scenario – is misleading, precisely because it fails to take into account climate change. Placing disproportionate blame on Tibetan pastoralists also greatly undervalues indigenous knowledge and the important role that the original custodians of the land can play in climate adaptation efforts. [...] The interdependencies between environmental degradation, human well-being and regional security can only be addressed on the basis of a cooperative and people-centred approach.”⁹⁶

The policy of nomad settlement in the PRC is based on a false premise framed as “a contradiction between grass and animals”. China’s plans to transform livestock production by concentrating it and industrialising it were first announced by Du Runsheng, architect of intensive ranching and agribusiness, in Tibet in 1987. Du Runsheng, who died at the age of 102 in October (2015),⁹⁷ had referred to “the contradiction between raising livestock and growing grass”. Gabriel Lafitte writes: “He could not accept the basic premise of mobile nomadic grazing, and its skilful productivity, all of which rely on moving the herds from pasture to pasture well before the grasses are grazed too heavily. He took the classic Chinese peasant farmer viewpoint, that moving with the animals is primitive and backward, that ‘Most of the livestock raising areas in China are still in a condition of nomadic or semi-nomadic grazing.’”⁹⁸

Du Runsheng’s line on pastoralist nomads is reflected by the CCP today. The Chinese authorities represent the policies as having an entirely positive impact, and Western journalists on official visits to Tibet have been routinely taken to visit homes where local people have been settled. Over the past decade, the reporting has rarely reflected the scale or what is at stake with this re-shaping of the Tibetan landscape, both in geographical and cultural terms.

95 ‘Survey of Ecological Migration Studies’, Meng Linlin, Bao Zhiming, Journal of the Central University for Nationalities, p 49.

96 ‘An uncertain future on the Plateau’ by Katherine Morton, April 28, 2009, <https://www.chinadialogue.net/article/show/single/en/2961>

97 China Daily, October 9, 2015, <http://www.ecns.cn/2015/10-09/183725.shtml?utm>

98 Email communication from Gabriel Lafitte, October 15, 2015

Journalists who do describe it accurately receive unfavorable attention from the Chinese government. When McClatchy correspondent Tim Johnson, who traveled to Tibet unofficially, described the resettlement project as a “massive campaign that recalls the socialist engineering of an earlier era”, he was called into the Foreign Ministry and told that his writings “were not true and ‘unacceptable’ to the Chinese government”.⁹⁹

After the New York Times published a prominent comment article in July 2015 criticizing the nomad settlement policy,¹⁰⁰ a group of international journalists were invited to Ngaba (Chinese: Aba) Tibetan and Qiang Autonomous Prefecture and invited to speak to herders. They were introduced to a former nomad who “heaped nothing but praise on a government program that settled his family into a permanent home”. He later admitted that he was also a member of the local Communist Party organization that helped implement the resettlement program.¹⁰¹

On an official visit to China in 2010, the U.N. Special Rapporteur on Food, Olivier De Schutter, aligned himself with the new consensus on the value of keeping nomadic herders on the pasturelands, stating strongly that both Tibetan and Mongolian nomads should not be compelled to settle. Linking nomad settlement to deprivation of livelihood, the U.N. Rapporteur stated: “While there is little doubt about the extent of the land degradation problem, the Special Rapporteur would note that herders should not, as a result of the measures adopted under the ‘*tuimu huancao*’ (‘removing animals to grow grass’) policy, be put in a situation where they have no other options than to sell their herd and resettle. [...]”

“The Special Rapporteur encourages the Chinese authorities to engage in meaningful consultations with herding communities, including in order to assess the results of past and current policies, and examine all available options, including recent strategies of sustainable management of marginal pastures such as the New Rangeland Management (NRM) in order to combine the knowledge of the nomadic herders of their territories with the information that can be drawn from modern science.”¹⁰²

99 See Tim Johnson’s ‘China Rises’ blog, May 2007 archive, available at: <http://washingtonbureau.typepad.com>.

100 This followed an article by Andrew Jacobs on the displacement of nomads on July 11 (2015) as follows: <http://www.nytimes.com/2015/07/12/world/asia/china-fences-in-its-nomads-and-an-ancient-life-withers.html>. The link to the oped cannot be accessed online at the time of writing.

101 Wall Street Journal, ‘On Tibetan Tour, China Trots Out Yak and Pony Show’, August 3, 2015, <http://blogs.wsj.com/chinarealtime/2015/08/03/on-tibetan-tour-china-trots-out-yak-and-pony-show/>. Also see Reuters coverage of the same visit, August 3, 2015, <http://www.reuters.com/article/2015/08/03/us-china-tibetans-idUSKCN0080M120150803#MKHLx15uG8X1Qsxj.97>

102 Press release by the Special Rapporteur on the Right to Food: http://www.srfood.org/images/stories/pdf/press_releases/20101223_china-mission-press-release_en.pdf. The relevant section from the Special Rapporteur’s report on nomadic herders is enclosed as follows: “Threats to nomadic herders: Nomadic herders in Western Provinces and Autonomous Regions, especially in the Tibet (Xizang) and Inner Mongolian Autonomous Regions, are another vulnerable group. The Grassland Law adopted in 1985 both in order to protect grassland and in order to modernize the animal husbandry industry towards commodification has now been complemented by a range of policies and programs, including *tuimu huancao* (“removing animals to grow grass”) and *tuigeng huanlin* (“Returning Farmland to Forest”). These programs, part of the 1999 Western Development Strategy (*xibu da kaifa*), seek to address the degradation of pasturelands and control disasters in the low lands of China. They include measures such as grazing bans, grazing land non-use periods, rotational grazing and accommodation of carrying capacity, limitations on pastures distribution, compulsory fencing, slaughter of animal livestock, and the planting of eucalyptus trees on marginal farmland to reduce the threat of soil erosion. While there is little doubt about the extent of the land degradation problem, the Special Rapporteur would note that herders should not, as a result of the measures adopted under the *tuimu huancao* policy, be put in a situation where they have no other options than to sell their herd and resettle. The International Covenant on Economic, Social and Cultural Rights prohibits depriving any people from its means of subsistence, and the 1992 Convention on Biodiversity acknowledges the importance of indigenous communities as guarantors and protectors of biodiversity (Art. 8 j). China has ratified both of these instruments. [...] The Special Rapporteur also encourages the Chinese authorities to invest in rehabilitating pasture, and to support remaining nomads with rural extension. The potential of livestock insurance programs should also be explored, as tested successfully in Mongolia. Such programs, which pay nomads to restock

China's counter-productive policies and an alternative proposal

Tsering Tsomo, a former nomad who is now director of the Tibetan Center for Human Rights and Democracy in Dharamsala, India, gave this perspective on China's counter-productive policies of grazing bans, exclusion zones, and massive internal displacement.¹⁰³

You cannot step onto the same pasture twice, as Heraclitus might have said if he'd been a nomad.

I come from a nomad family in Tibet. My European friends seem to see grasslands as eternal, and also terminally boring because the eye travels so fast to the horizon, unlike the rainforest, [...] which by comparison evokes awe.

Our Tibetan pastures change all the time, there is no equilibrium for scientists to find. How could it be otherwise on the highest, driest and coldest plateau of the planet? Only the nomads, with their yaks, sheep and goats, know how to make this huge land habitable, know its moods, the gales that blow out of nowhere, or blanketing blizzards even in summer, while India



Traders in Yartsa Gunbu (caterpillar fungus) weigh and negotiate prices on a street in Kham

and recover after a major disaster, encourage nomads to keep herds at much smaller scale as they would not fear losing their herding activity after such disasters if covered by such insurances.”

¹⁰³ The article is Tsering Tsomo's summary of TCHRD's latest report, 'Wasted Lives: a critique of China's campaign to end Tibetan pastoral lifeways' <http://www.tchrd.org/2015/05/wasted-lives-new-report-offer-fresh-insights-on-travails-of-tibetan-nomads/>

swelters. The alpine meadows are neither dull nor eternal but they are every bit as diverse and productive as those magical rainforests.

This comes as news to China, now in command of the Tibetan pasture lands. China has a bad habit of calling even our richest pastures waste land, because it is not arable, not suited to ploughing and farming. China sees our hardy, resourceful, skilful nomads as ignorant herders wandering aimlessly behind their animals in search of grass, almost the definitive uncivilised barbarian. This leads to a command economy that pushes and pulls the nomads who range extensively over an area the size of Western Europe, nudging them ever closer to poverty and landlessness.

First came the communes, far too large, run by cadres with no idea of rangeland dynamics, determined to prove the virtues of communism by rapidly raising herd sizes, pushing land and people too hard. Then in the 1980s China went to the opposite extreme, contracting separately with each nuclear family for land tenure over land parcels that had to be fenced, driving nomads into debt. The intention was to incentivise nomads to care for what they had always cared for, but the allocated land was too small, usable in winter only, incurring further compulsory debts for fencing, ploughing, seeding and harvesting fields for fodder, and the compulsory construction of permanent houses.

In reality the herds concentrated on officially allocated land inevitably became over grazed, because nomadic mobility, the secret of 9000 years of successful Tibetan pastoralism, was restricted, then stopped. Since 2003 the policy has been to ban grazing in ever increasing areas redefined as watershed protection zones and redline demarcated national parks, excluding all human use. This is deemed an objective scientific necessity because the nomads are to blame for the land degradation caused by privatisation and parcelling our lands. Hundreds of thousands of proud and skilful nomads now lead wasted lives in concrete cantonments on urban fringes, their bitterly cold brand new concrete barracks a holding pen for folk deemed redundant to the dream of a modern meat commodity production chain.

This is done in the name of conservation, carbon capture, restoration of environmental services. Conservationists should look a bit more closely at what that means on the ground. As the world contemplates a Paris climate accord we pose questions whose answers may not be what you expect. How much longer can our melting Tibetan glaciers feed year round the great rivers of Asia? The thousands of kilometers glacier-fed rivers traverse the Tibetan pasture lands before plunging to the lowlands are not threatened by grazing, but sustained by intelligent, flexible, mobile light grazing herds, wild and domestic. Those pastures filter, clean and regulate the flow, as well as sustaining an extraordinary diversity of medicinal herbs and nutritious grasses.

What is achieved by grazing bans, exclusion zones, wasted lives, massive internal displacement and counterproductive policies? Chinese and international scientists now report that the biomass of grass does increase, at least in the few years immediately after grazing is banned, herds and herders removed. But most recent scientific reports tell us that carbon capture is greater when there is steady grazing, and that ungrazed pastures, fenced off to exclude wild antelope and gazelles as well, suffer invasive species invasion, loss of biodiversity, reversion to shrubland and the crowding out of medicinal herbs.

You can't step onto the same pasture twice because it's not the same pasture, it keeps changing, just like Heraclitus' river. Those who aren't intimately connected to grassland may not notice many of those changes, but we do, and now a new generation of Chinese and Tibetan scientists does too. China wants to build an eternal, unchanging pristine grassland wilderness on those pastures. We Tibetans want a chance to show that our traditional mobility is the best kind of community-based conservation, is both sustainable and productive, and can lift us out of poverty, if the command economy can let us prove it.

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Harsh Winter: Bleak Outlook

“Harsh Winter; Bleak Outlook” is a powerful account written by a local Tibetan from Dzatoe County in Yushu prefecture, Qinghai, on the everyday difficulties of life for nomads under Chinese policies. The nomad writes that in the desperation of their situation, “People can’t even afford food, and their formerly bulging bellies have started to flatten.” It was received by ICT in 2014 and translated into English as a rare account from Tibet on nomadic lives; an edited version is published for the first time below. The account shows that after the loss of land and their livelihoods, ill-prepared to compete with Chinese migrant workers for employment, more and more Tibetans depend on collecting the fungus known as yartsa gunbu to earn a living. Yartsa gunbu, which in Tibetan means ‘winter worm, summer grass’, is bought by traders and sold to pharmaceutical companies and Chinese medicine clinics across China. But today the fungus is collected at unprecedented rates and is in danger of becoming over-picked. With the additional threat of climate change, the increased dependence on yartsa gunbu by local economies calls for stronger sustainable resource management in the region.¹⁰⁴

A few years ago, the Chinese government implemented a policy called “Retreating from the Pastures to Bring the Grass Back”. Many herdsmen had to abandon grasslands and pastures, and move into towns to settle down. These herders initially had some fantastic dreams. They thought that it would be wonderful to live in the town. They felt that livestock were burdensome and life would be better without them. No matter what, they thought that Yartsa Gunbu, the “lifesaver”, is there, and their home, car, cash, and everything will be in abundance. They never thought that the “lifesaver“ could take a plunge as it did this year. Now they don't have the money to purchase meat, butter, yogurt and milk. They don't have tents and yak dung for fuel any more. In the new concrete house, they have to burn the high priced coal briquettes, but the price for the briquettes is too high for them to purchase. Can't mention playing mahjong and “kari mari” (billiards) anymore, as people can't even afford food, and their formerly bulging bellies have started to flatten.

Some policies of the Chinese government are cut by a sword to make “one size that fits all.” These bureaucrats bring policies implemented in the streets of Beijing to our grasslands, which just messes things up here. In fact, “Retreating from the Pastures to Bring the Grass Back” is not working in Tibetan pastoral areas, and it has cut off the lifeblood of the people. Many years ago, the implementation of a policy called “Destroy all the Rodents on the Grassland” lead to

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¹⁰⁴ There are numerous sources on the issue; see, for instance, interviews with specialist Daniel Winkler in the Seattle Globalist, February 3, 2014, <http://www.seattleglobalist.com/2014/02/03/the-mushroom-that-saved-tibets-economy/19214>, and NPR, October 12, 2011,



The 1142 km section of the railroad from Golmud to Lhasa traverses the vast high altitude plains once mostly inhabited only by wild animals such as the Tibetan antelope, or chiru. The chiru is increasingly endangered as these areas, protected in the past by their remoteness, have become increasingly accessible as a result of road and rail construction, and the greater availability of suitable vehicles. IMAGE: ICT.

the spreading of many tons of poison on to the grasslands. In the end, the rodents did not die, but the eagles, hawks, and other natural predators of rodents, were killed. Thus, the nature of the food chain on the grassland was destroyed. The impact of this policy caused long-term ecological destruction of the grassland.

The Tibetan herdsmen are the real owners of the grassland; the grassland is both the home and a source of life for Tibetan herdsmen. We, Tibetan people, since ancient times, have been living on the meadows surrounded by snow-capped mountains and the blue sky. Depending mainly on animal husbandry, our people have eaten well and lived happily for generations after generations. We believe in Buddhism. We are faithfully devoted to Kunchok Sum (the Three Jewels [of Buddhism]). We have lived in harmony with nature. We have been friendly with our neighboring nations. Our forefathers were neither unable to make weapons, nor unable to make wars to expand the territory. It is not that our forefathers did not know how to bring reformation or change things or build an industrialized civilization. It is because of religious faith, a sense of compassion, love and peace, and of respect and cherishing of nature and all living beings, that our ancestors felt satisfied with basic and simple style of life. A simple and peaceful life with fewer material and more inner development was the pursuit of our forefathers. It is this that makes our Tibetan culture unique and attracts attention from the world's developed countries.

The Industrial Revolution brought us the material affluence, but it also accelerated the process of the destruction of both humans and the blue planet. Scientists are now realizing this and are looking to us for solutions; even while they once considered us to be “stupid” and “barbaric.”

We Tibetans can't be self-defeating people; we can't blindly follow the trend to urbanization. In catching up with modern technology, we should begin by strengthening our culture, language, environmental protection, and economic development focused on local needs. We can't lose our cultural heritage and characteristics; we can't lose our livestock; we can't lose our grasslands.

Before the “Reform and Opening up”, Dzatoe used to be well known as the “Millionaire County”, and there were millions of livestock in the county. In the late 1970s and 80s, Dzatoe was ranked first place in Yushu Prefecture for its educational quality and achievement. After the year 2000, Yartsa Gunbu made us “Upstarts”. With Yartsa Gunbu, the “lifesaver plant”, we had money and we gained a lot of weight. We lost interest in doing any hard work; we lost interest in herding livestock; and our kids lost interest in studying hard. Herders threw away their *wortak* (sling) and moved to the county capital with fantastic dreams to start a luxurious and joyful life. The “Nomad Settlement Project, “which lures Tibetan herders into the town, is the main cause for this situation.

The most unimaginable thing is that there is no sheep to be seen any more in the vast territory of Dzatoe County today. All the sheep have been sold to Chinese, Chinese Muslims and Amdo Tibetans by the truck loads for cheap prices in the last few years. Today, flocks and flocks of sheep can be seen grazing in agricultural regions around Xining to Lanzhou and areas in Amdo along the 214 Highway. People from Dzatoe even can recognize sheep which they have sold to Chinese, Chinese Muslims and Amdo Tibetans along the way when they travel to Xining or Lanzhou via above mentioned places.

For herders in Dzatoe, the winter of 2014 has already been unusually cold and harsh.

As the saying goes, “Without eating bitter melon, one won't know how sweet the honey is.” My dear folks, we must learn something from this lesson. Please do not forget our yesterday, take a good look at our today, and think carefully about our tomorrow! We Tibetan herdsmen, yak, sheep and horses all belong to the vast pasturelands of Gedrong Dzatoe! Our people, yak, sheep and horses all cannot be allowed to disappear on someone's whim. Look, the eagle is soaring between the peak of the snow mountain and the blue sky!

November, 2014

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The Qinghai-Tibet railway and its connection to Shigatse has been crucial in the expansion of mining in Tibet, making it possible to transport more ores out of Tibetan areas, many of which were previously remote and inaccessible. The new link to Shigatse (Chinese: Rigaze), pictured soon after its opening in 2014, is essential for facilitating copper and gold mining in Shetongmen; the proximity of the mine to a major river raises serious environmental concerns.

Part Five: The impact of mining on Tibet's water and environment

"I was born into a Drokpa (Tibetan nomad) family and spent the first years of my life in the wild eastern part of Tibet. We traveled with our animals from summer to winter grounds, setting up our yak-hair tents at each site. It was a simple existence and my daily joy consisted of exploring the nearby mountains with my pet goat. If I was lucky, I would see wild animals such as nawa (Tibetan argali) and shaba (white-lipped deer) at close range. Sometimes, I would watch herds of kiang (Tibetan wild ass) running across the grasslands.

When I was four or five years old, there was a severe drought and the local spring in our camp began to dry up. Because I was considered an unusual child (although at that time, nobody knew I would later be recognized as the 17th Karmapa), our community requested my father ask me to plant a sapling at the source of the spring. I remember leading prayers with the aspiration that this tree would help provide water for all living beings nearby. Although I had no idea that what I was doing was an "environmental" act, or what watershed meant, my love for nature and dedication to protect the environment sprouted from this seed.

As I grew up and began studying Buddhist philosophy and teachings, I discovered great harmony between Buddhism and the environmental movement. The emphasis on biological diversity, including ecosystems—in particular, the understanding that animate and inanimate beings are parts of a whole—resonates closely with Buddhism's emphasis on interdependence."

– **Ogyen Trinley Dorje, the 17th Karmapa**¹⁰⁵

¹⁰⁵ 'Walking the Path of Environmental Buddhism through Compassion & Emptiness' by the 17th Karmapa, Talk at 23rd Mind & Life



Police opened fire on Tibetans at a cement factory in the Tibetan area of Amdo (Labrang in Gansu) on May 15, 2010, after local villagers gathered, concerned about pollution from the factory. This image shows armed police in riot gear outside the factory in Madang Township.

Tibet, known as China's treasure-house in the West, is rich in the minerals China needs, as its manufacturing industries migrate inland, closer to Tibet and further from coastal ports and global imports of raw materials. A major goal of the 13th Five-Year Plan is for raw materials needed for China's growth to be sourced from Tibet rather than from imports.¹⁰⁶

Large-scale mining has begun in Tibet, and all the mines are situated in the watersheds of Asia's major rivers that support hundreds of millions of people downstream. The impacts on Tibet's water are profound. A scientific study of the water quality of the headwaters of four major Asian rivers, the Yangtze River, the Mekong River, the Salween River and the Yarlung Tsangpo (Brahmaputra) together with an evaluation of drinking water quality concluded that: "Rapidly increased mining activities pose a high risk of heavy metal pollution for the local environment and a potential threat to the downstream water quality. [...]"

"Nearly 20 years of industrial scale mining operations have been carried out on the Plateau. The ongoing operations are lacking adequate management and operating experience causing poor planning and waste management [...]. Furthermore, since environmental regulations are poorly implemented over the Plateau, there is also a lack of knowledge on the apparent and potential impact of these mining activities on the environment. This is of particular concern with regards to the Plateau's vast supply of freshwater. Accelerated with the established central China Tibet railway, large-scale mining operations are launched and more are to come on the Plateau. Mineral processing factories are located within the major river catchments in the Plateau. Apparently, the huge amounts of mining wastes that are generated by these activities pose a significant threat to the region's surface water and the fragile environment."¹⁰⁷

conference, 'Ecology, Ethics & Interdependence'. Video at: <http://www.ecobuddhism.org/wisdom/interviews/hhk2011>

¹⁰⁶ A more comprehensive examination of the scale and impact of the mining industry in Tibet is beyond the scope of this report, but ICT recommends Gabriel Lafitte's authoritative book, 'Spoiling Tibet: China and Resource Nationalism on the Roof of the World', Asian Arguments series, Zed Books, 2013

¹⁰⁷ The research focused upon an assessment of potential impact of mining activities on the regional surface water quality in the central Tibet; a simple evaluation of the drinking water quality in the largest city of the Plateau, Lhasa, the capital city of the Tibet Autonomous Region (T.A.R.). The results presented provided new information on the current chemical characteristics of surface water and drinking water in the "Water Tower of Asia" and offer background information and sources. 'Water Quality in The Tibetan Plateau: Chemical Evaluation of the Headwaters of Four Major Asian Rivers' by Xiang Huang, Publications of the University of Eastern Finland Dissertations in Forestry and Natural Sciences, University of Eastern Finland Faculty of Science and Forestry Department of Environmental Science, Kuopio, 2010. Available for downloading at http://epublications.uef.fi/pub/urn_isbn_978-952-61-0020-3/urn_isbn_978-952-61-0020-3.pdf

Gabriel Lafitte, author of ‘Spoiling Tibet: China and Resource Nationalism on the Roof of the World’, the authoritative text on mining in Tibet,¹⁰⁸ writes: “Tibet, Asia’s number one water tower, is to provide the water, copper, gold, silver and many other metals, plus enormous flows of hydropower to the factories of Chongqing, Chengdu, Lanzhou and Xining that make all the big brand consumer products in our pockets. This too is transforming Tibet, as China’s resource nationalism finds domestic sources to substitute for imports, primarily in Tibet and elsewhere in western China, such as the Uighur region of nominal ‘autonomy’ in Xinjiang, and the nominally ‘autonomous’ Inner Mongolia. If we add the lands of the Mongols, Tibetans and Uighurs we are talking of half of China, an area bigger than the maximal definition of Europe, from the Urals to Portugal.”¹⁰⁹

The Chinese authorities started surveying and mining Tibet in the 1950s and while the industry expanded considerably during economic reforms of the 1980s and 1990s it generally remained small-scale. But as China has faced growing shortages in the domestic supply of raw materials there has been an accelerated exploitation of Tibet’s rich mineral reserves - as infrastructure has developed, mineral commodities have become increasingly exploited, leading to land degradation, pollution, and harm to livestock and wildlife bio-diversity.

To an economist, a rise in mineral extraction, or a rise in the production of wool and dairy products would both count as economic growth, hence growth in per capita GDP. But in reality, mineral extraction undertaken by large corporations providing minimal local employment may add almost nothing to a local economy. Beijing’s long-haul plans for mining Tibetan areas confers benefits elsewhere, while Tibet must cope with degradation of the environment, loss of amenities, resource depletion, and a surge of immigrants.

Environmentalists and economists within China have questioned the choice of mineral exploitation as the basis of Tibetan modernization. Chinese economists Hu Angang and Wen Jun warn that the heavy emphasis on mineral extraction in Tibet will make it hard to protect the fragile ecosystem of the Tibetan plateau: “Not only will this [strategy] be harmful to the protection of the environment, it could also possibly lead to history repeating itself in the form of ‘pollute first, put in order later’ and ‘great damage, great pollution’.”¹¹⁰

An avalanche of rock, mud and debris that struck one of Tibet’s major mining sites, Gyama copper and gold mine near Lhasa, on March 29, 2013, focused attention on the toll of mining and industrialization in Tibet. Eighty-three miners, who were mostly Chinese migrant workers, were killed. There had long been concerns about the impact of the Gyama (Chinese: Jiama) Copper Polymetallic Mine, which is in an area of historic and cultural significance, on Tibet’s fragile high-altitude landscape.¹¹¹

While the Chinese authorities described it as a ‘natural disaster’, research by the Environment and Development Desk of the Central Tibetan Administration viewed it otherwise, stating the following in a detailed report: “In order to acquire maximum profit in the shortest possible

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¹⁰⁸ Ibid

¹⁰⁹ ‘Pitching Tibet, in a new key’, uploaded on <http://rukor.org/> on November 21 (2015)

¹¹⁰ Cited in ICT report, ‘Tracking the Steel Dragon’, *ibid*.

¹¹¹ ICT report, April 5, 2013, ‘Disaster in Gyama draws attention to impact of mining in Tibet’, <http://www.savetibet.org/disaster-in-gyama-draws-attention-to-impact-of-mining-in-tibet/#sthash.33QAsWt2.dpuf>

time, mining in Gyama has been pursued aggressively. Whole swathes of land have been excavated in several sites and in some cases the whole face of a mountain has been stripped off in the process of exploration, water diversion, mining and road construction. It was just a matter of time that such large scale and aggressive expansion of mining was going to cause a large scale disaster. The Environment and Development Desk [...] believes that the landslide in Gyama is a man-made phenomenon rather than a natural disaster.”¹¹²

There had long been concerns about the impacts of mining at Gyama, in Maldro Gungkar (Chinese: Mozhu Gongka) county, approximately 42 miles outside of Lhasa. A study of water quality below the Gyama mine carried out in 2010 revealed that: “elevated concentrations of heavy metals in the surface water and streambed at the upper/middle part of the valley pose a considerably high risk to the local environment...and to downstream water users. Environmental changes such as global warming or increased mining activity may increase the mobility of these pools of heavy metals.”¹¹³



Aluminium smelting requires heavy supply of electricity, from damming Tibetan rivers: Ma Chu (upper Yellow River) in Amdo/Qinghai. Michael Buckley: Meltdown in Tibet website/ Google Earth image

Protests against mining in Maldro Gungkar started in the early 1990s soon after the miners moved in to exploit the ore deposits. The mining operation has reportedly dried up spring waters, poisoned drinking water, killed 1,000 domestic animals and destroyed flora and fauna in the region. Although local Tibetans demanded the closure of the mine, in August 2011, China Gold International Resources Corporation stated that it would still proceed with a major expansion of the project.¹¹⁴

The Qinghai-Tibet railway and its connection to Shigatse has been crucial in the expansion of mining in Tibet, making it possible to transport more ores out of Tibetan areas, many of which were previously remote and inaccessible. Shetongmen mine close to Shigatse (Chinese: Rikaze) in the Tibet is such an example following the new rail connection to Shigatse, that opened in August, 2014.

¹¹² 'Assessment Report of the Recent Landslide Event in the Gyama Valley: Its Possible Cause and Impacts', the Tibetan Department of Environment and Development, April 9, 2013, online at www.tibet.net

¹¹³ Also see 5.2, case study of Gyama, 'Water Quality in The Tibetan Plateau : Chemical Evaluation of the Headwaters of Four Major Asian Rivers' by Xiang Huang, details as above, http://epublications.uef.fi/pub/urn_isbn_978-952-61-0020-3/urn_isbn_978-952-61-0020-3.pdf

¹¹⁴ 'Fatal Landslide Draws Attention to the Toll of Mining on Tibet', April 2, 2013, New York Times, <http://www.nytimes.com/2013/04/03/world/asia/deadly-tibetan-landslide-draws-attention-to-mining.html>; 'Canadian Treasure Hunt in Tibet Triggers Protest', Environmental News Service (ENS), October 21, 2010, <http://www.minesandcommunities.org/article.php?a=10488>; 'Landslide in Gyama Mine: natural or man-made?' March 30, 2013, <http://tibet.net/2013/03/landslide-in-gyama-mine-natural-or-man-made/>

Shetongmen's proximity to a major river raises serious environmental concerns, since the steep site will have to securely hold at least 75 out of every 100 tonnes of rock mined and crushed to powder to extract a concentrate that can be sent by rail to a distant smelter. According to recent research, there is already a natural heavy-metal load in the river; any leakage from the hillside dam waste tailings could be disastrous.¹¹⁵ Not only would downstream India and Bangladesh be affected; if the planned water diversion of Tibetan rivers to the Yellow River includes capturing the Yarlung Zangbo, downstream China's water purity would be threatened too.

Gabriel Lafitte writes: "The great rivers of Tibet, drunk daily by one billion people across Asia, naturally carry a burden of dangerous metals, as a young land starts eroding. Any further burden, from mining and its vast dumps of tailings waste, would be disastrous. Yet the gold of Tibet is found either in riverbeds (alluvial gold) or in big deposits close to rivers, especially the Yarlung Tsangpo river, whose bed is literally the collision point of India and Eurasia.

"These are scientific reasons to be extremely cautious about mining Tibet. None of this was known, in scientific categories, by Tibetan villagers and nomad encampments, yet they instinctively recoiled from mining. Usually their aversion to breaking the grasslands or digging the mountains was reinforced by local lamas urging respect for the old pre-Buddhist gods of earth and water, still capable of causing trouble if disturbed. There is a remarkable congruence between sacred sites, sacred forests and mountains; and areas of high biodiversity or natural values especially worth conserving."¹¹⁶

It is notable that while the Chinese authorities claim to be removing pastoralists from the grasslands for 'conservation', they are often removed in order to make way for mining activities. Tenzin Norbu, formerly of the Environment and Development Desk of the Central Tibetan Administration told the BBC: "The Chinese government says the pastoralists are being resettled mainly to conserve the grassland that it claims is being degraded because of unsustainable pastoral practices. But what you are seeing is that these Tibetans are being removed so that their age-old pastoral lands can be rampantly mined and that actually has led to huge environmental destruction."¹¹⁷

Tibetans have increasingly been prepared to protest against the impact of mining or other industrial activity on their local environment in recent years despite the dangers. The frequency of these mining protests in many areas of Tibet, as well as the repressive response by the Chinese authorities, is well-documented. Even when Tibetans take care to express their concern peacefully and moderately, they are still tear-gassed, arrested, tortured, imprisoned or even killed.

In August (2015), the Chinese authorities used intimidation and threats of force to block attempts by local Tibetans to save a sacred mountain from uranium mining at Dringwa

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¹¹⁵ 'Water Quality in The Tibetan Plateau : Chemical Evaluation of the Headwaters of Four Major Asian Rivers' by Xiang Huang, details as above

¹¹⁶ 'Gold From Tibet: An update, Conflict Minerals in Tibet', November 5, 2015, http://rukor.org/gold-from-tibet-an-update/#_ftn2

¹¹⁷ 'Tibetans displaced within region 'amid rampant mining' by Navin Singh Khadka, Environment reporter, BBC News, December 13, 2013, <http://www.bbc.co.uk/news/science-environment-25359391>

(Chinese: Zhanwa) Township in Dzoeye (Chinese: Ruo'ergai) County, Ngaba (Chinese: Aba) Tibetan and Qiang Autonomous Prefecture, Sichuan Province.¹¹⁸

Chinese police shot dead a Tibetan during a protest related to mining in a Tibetan area of Sichuan in August, 2010, after police opened fire on a group of Tibetans protesting about environmental damage caused by mining in the eastern Tibetan area of Kham.¹¹⁹

This followed an incident earlier in the same year, when on May 15, 2010, police opened fire on Tibetans at a cement factory in the Tibetan area of Amdo (Labrang in Gansu Province) after local villagers, worried about pollution from the factory, started to rebuild a road that had been closed by the expansion of the factory. Fifteen people were taken to hospital with gunshot wounds or injuries from beatings by police.¹²⁰

Given the protests against mining by Tibetan communities determined to protect their livelihoods, sacred mountains and pilgrimage routes, there is a strong case to argue for the classification of specific minerals from Tibet as 'conflict minerals'. New guidelines have been developed, the Organisation for Economic Cooperation and Development (OECD)¹²¹ Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, that cover China's mining companies operating in Congo, Central African Republic, and other conflict zones. They are then be subject to a regulatory regime that effectively bans the entry of conflict minerals into the global commodity supply chain.¹²² While the OECD MoU is with Chinese companies that import from around the world (and export worldwide), the same Chinese companies mining deposits in Congo, Peru or Papua New Guinea are also mining Tibet.

¹¹⁸ Report by the Tibetan Center for Human Rights and Democracy, April 24, 2015, <http://www.tchrd.org/chinese-miners-threaten-tibetans-trying-to-save-sacred-mountain-from-uranium-mining/>. TCHRD reported: "According to reliable information received by TCHRD, on August 10 a mining team sent by the Chinese government proceeded to start mining at Drakzong, a sacred mountain in Dringwa. Just then a large number of Tibetans gathered at the site to stop the miners, with Tibetans explaining to the Chinese miners that it was inauspicious to mine at the sacred site and that mining would have disastrous consequences on the environmental stability of the region. In response, the miners threatened to call the police for obstructing their work. Despite protests from Tibetans, the mining team has already made preparations to start mining uranium; mining machines and equipment have been brought to the site. Uranium was initially mined mainly for producing nuclear weapons and since the 1960s, for manufacture into nuclear reactor fuel. Being both radioactive and a toxic heavy metal, uranium mining can contaminate air, soil and water." Also see: Tibet Watch report, Environmental Protests on the Tibetan Plateau, January 2015, http://www.tibetwatch.org/uploads/2/4/3/4/24348968/environmental_protests_on_the_tibetan_plateau.pdf

¹¹⁹ ICT report, <https://www.savetibet.org/chinese-government-admits-to-fatal-shooting-of-tibetan-in-mining-protest/#sthash.BXKBriF9.dpuf>

¹²⁰ ICT report, <https://www.savetibet.org/chinese-government-admits-to-fatal-shooting-of-tibetan-in-mining-protest/#sthash.BXKBriF9.dpuf>

¹²¹ <http://www.oecd.org/>

¹²² Gabriel Lafitte has documented details of conflict over the extraction of gold, lithium, uranium and copper in his series on 'Conflict Minerals in Tibet on his website rukor.org

To Amnye Machen A poem by 'The Plateau is my Home'

This poem, by an unnamed Tibetan writer, is an impassioned tribute to a range of mountains in north-eastern Tibet, considered the most sacred in the Tibetan area of Amdo, a place of pilgrimage. The poem, entitled 'To Amnye Machen' by a Tibetan blogger calling themselves, The Plateau is my Home, was posted on a Tibetan language website, a TibetCul blog, on September 5, 2011. The poem, translated below by the literary website High Peaks Pure Earth highlights environmental damage in Tibet caused by mining and is another example of social media discussion on this issue.¹²³

Even though I have never seen you
Even though I have never been at your side
I know your stalwart figure
Standing firmly in the boundless space between heaven and earth
On your venerable forehead that has passed through thousands of years
Are the clean snowflakes shining in the sun of the plateau
Under your vast, peaceful and smooth feet
Is the sound of praises sung to you by the plateau herders.
You are one of the nine sacred mountains of Tibet
Your fame is firmly established throughout the world.
You are the Dharma defender of Amdo
Your good name is widely known.
However, today, the wheels of greed
Are running over the grassland, entering directly under your feet
They bring bombs, trucks, and excavators
And other bizarre tools that are used by demons
To excavate the hidden gems in your body
The people who have been guarding you for millions of years
Are unable to guard you anymore
They can only endure in silence
Their only choice is to wait helplessly...
One day they will be forced to move out
Saying goodbye tearfully to your beautiful and warm embrace.
Where will they go?
They will be placed on the edge of the barren desert
Henceforth, on our sacred Amnye Machen
The white flocks of sheep will never be seen again
The song of the herders will never be heard again
Those filthy greedy people will soon mercilessly stifle you

¹²³ For other High Peaks Pure Earth posts about Tibetan concerns about mining, see “2006 Appeal Letter Against Mining in Amdo, Tibet, Resurfaces Online”, “Kumbum On A Journey”, “Impoverished Matö County” By Woesser, “An Appeal Letter from Kumbum Monastery”, and “Please Stop the ‘Development’ of Mount Kailash and Lake Manasarovar for Profit” By Woesser on <http://highpeakspureearth.com>

Recommendations for protection of Tibet the ‘Third Pole’ at the Paris climate change conference and beyond

Tibet - the world’s highest and largest plateau - is of increasing geopolitical significance. It is in a strategic location in Asia, which has the world’s fastest-growing economies, fastest-rising military expenditures and fiercest competition for resources. Tibet has the largest reserve of accessible fresh water on earth and is the source of most of Asia’s major rivers, supplying water to millions of people downstream. As such it needs to be brought back to center stage. There is a need for the international community to re-evaluate Tibet as an issue tied to Asian and global security, at the center of Asia’s unfolding future. Tibet’s present is linked to China’s future. Tibet needs serious attention in global talks on climate change, and China’s strategies to address climate change need to involve the Tibetan people.

The International Campaign for Tibet makes the following recommendations:

- 👉 Governments and civil society stakeholders should help ensure the inclusion in the Paris climate agreement at COP21 of strong provisions to ensure that actions to address climate change uphold human rights,¹²⁴ are driven by the needs of vulnerable groups and ecosystems such as Tibetans on the Tibetan plateau, and incorporate traditional and indigenous stewardship.¹²⁵
- 👉 The Chinese government should allow pastoralists to live in protected areas including newly created National Parks on the Tibetan plateau and to continue the practice of pastoralism - given that current policy on the settlement of Tibetan nomads has led to increased rangelands degradation. The Chinese government should not engage in ‘green grabbing’ (displacement by conservation).

¹²⁴ The U.N. Human Rights Council in Geneva adopted a new resolution on climate change and human rights in July (2015). See report at Climate Change News, July 6, 2015 <http://www.climatechangenews.com/2015/07/06/climate-change-is-a-matter-of-human-rights-agrees-un/>

¹²⁵ IUCN on the importance of reconciling indigenous and protected areas: Reconciling indigenous peoples and protected areas: rights, governance and equitable cost and benefit sharing’, Discussion Paper by Peter Bille Larsen, with contributions from Gonzalo Oviedo, IUCN, Gland, February 2006, https://cmsdata.iucn.org/downloads/iucn_reconciling_ip_and_pa.pdf

Global experience shows that the most effective way of achieving REDD objectives¹²⁶ is by including pastoralists as part of the solution rather than excluding them as part of the problem. Pastures are not threatened by grazing but sustained by flexible, mobile, light grazing herds, both wild and domestic, and pastoralist communities are best motivated to rehabilitate degraded lands when they have secure land tenure and are not displaced.


- 👉 The Chinese government should impose a moratorium on the settlement of Tibetan pastoral nomads displaced by development or conservation, pending an independent assessment, including a legal review, of policies that require or produce displacement and resettlement, the confiscation of property and the imposed slaughter of livestock. China needs Tibetan nomads' traditional ecosystems knowledge of the grasslands.
- 👉 ICT urges support for recommendations from the U.N. Special Rapporteur for the Right to Food, encouraging the Chinese authorities to engage in meaningful consultations with herding communities, including in order to assess the results of past and current policies, and examine all available options, including recent strategies of sustainable management of marginal pastures such as the New Rangeland Management (NRM) in order to combine the knowledge of the nomadic herders of their territories with the information that can be drawn from modern science.¹²⁷

The International Covenant on Economic, Social and Cultural Rights prohibits depriving any people from its means of subsistence, and the 1992 Convention on Biodiversity acknowledges the importance of indigenous communities as guarantors and protectors of biodiversity (Art. 8 j). China has ratified both of these instruments.


- 👉 The intensification of hydro-dam construction on all major Tibetan rivers – in areas of high seismic risk - has been emphasised in China's 13th Five Year Plan. Given the evidence presented in this report and by numerous experts in China and internationally on the dangers of such large-scale damming in such a fragile and significant high-altitude plateau, this policy requires urgent reconsideration by international experts and the Chinese leadership. There should be a moratorium on building of large dams on the plateau. The Chinese authorities must conduct a thorough environmental impact assessment before implementing such potentially irreversibly harmful projects.
- 👉 The prospect of a mega project that interrupts the environmental flow of the upper Yangtze, impounds and diverts billions of cubic meters of water to the north through Ngaba (Chinese: Aba) prefecture in Tibet requires urgent reconsideration and independent international expertise in order to evaluate whether it is suitable for such a project to proceed, given its implications for the fragile high-altitude ecosystem, provision of water downstream, and regional security concerns.


¹²⁶ Reducing emissions from deforestation and forest degradation (REDD) is a mechanism that has been under negotiation by the [United Nations Framework Convention on Climate Change \(UNFCCC\)](#) since 2005, with the objective of *mitigating climate change* through reducing net emissions of [greenhouse gases](#) through enhanced [forest management](#) in developing countries. As a mechanism under the multi-lateral climate change agreement, REDD+ is essentially a vehicle to financially reward developing countries for their verified efforts to reduce emissions and enhance removals of greenhouse gases through a variety of forest management options.


¹²⁷ Recommendations put forward by the Special Rapporteur on the Right to Food Olivier Schutter in 2010 following his visit to Tibet. Beijing, December 23, 2010, http://www.srfood.org/images/stories/pdf/press_releases/20101223_china-mission-press-release_en.pdf. The current Special Rapporteur on the Right to Food is Hilal Elver.

 Governments and civil society stakeholders should through public statements, bilateral channels and international institutions express concerns over the unsustainable development of Tibet's water resources and the governance of rivers arising from Tibet, on the basis of the plateau and beyond being considered as a vital water-shed area.¹²⁸ This requires treating the Tibetan watershed as a supranational unit essential to effective conservation, multilateral coordination and cooperation, and effective water demand management and climate change mitigation. Multilateral, multinational institutions need to be involved in order to not only set standards but to hold riverine parties accountable for impacts upstream and downstream.

Encouraging trans-boundary collaborative decision-making and governance of the Tibetan plateau's water resources, including all regional and local stakeholders, will enhance the effectiveness of mitigation policies and promote equitable adaptation strategies that can reduce the risk of conflict over competition for water resources.

 Wetland desiccation, both anthropogenic and induced by climate change, now threatens biodiversity, agricultural productivity and rural livelihoods across the Tibetan plateau. The Chinese authorities must be urged to remediate water meadow habitats as a top priority to prevent methane emissions and biodiversity conservation outcomes and to enhance rural livelihood.


 International organizations, governments and civil society stakeholders should encourage the Chinese government to uphold the principle of free, prior and informed consent (FPIC) in relation to all decisions over development of Tibet's resources, including all mining projects on the Tibetan plateau. Both publicly and privately, express concerns over the impact of mining on the environment and communities on the Tibetan plateau, and the ramifications for the region. Urge the adoption of far greater environmental and social standards for mining in Tibet.


 OECD due diligence guidelines on conflict minerals in the commodity chain are gaining worldwide use.¹²⁹ Given Tibetan distress and widespread protests against mining in Tibet, minerals extracted from Tibet meet this characterization and any company potentially sourcing minerals or metals from Tibet should be held to account for extracting conflict minerals.

 There should be urgent re-evaluation of the dramatic increase in withdrawing water from protected areas where glaciers are already shrinking for an expanding bottled water industry. Carbon emissions of the extra technologies and transportation needed to bring the product from source to market should also not be ignored, in particularly given the emphasis from the Tibet Autonomous Region government in promoting the export of bottled water.


¹²⁸ It has been characterized as the 'Greater Asian Water-Shed' – see Earth Economics, <http://earthconomics.org/Page76.aspx>. A watershed is "that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community." (John Wesley Powell, scientist geographer, cited by the United States Environment Protection Agency: <http://water.epa.gov/type/watersheds/whatis.cfm>).


¹²⁹ OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, <http://www.oecd.org/corporate/mne/mining.htm>


-  International organizations, governments and civil society stakeholders should urge independent, international scientific assessments of the changes in the Tibetan plateau's ecosystems, water resources and land use policies, and data sharing. The participation of scientists and relevant stakeholders from Tibet and from those nations that depend on Tibet's water is necessary for rigorous examination, analysis and interpretation of conditions on the plateau. This will facilitate an equitable and durable approach to adapting to and mitigating the affects of climate change in the region, including science-based ecosystem restoration and management of the plateau's grasslands and forests.

-  International governments and global institutions prevailed upon to fund schemes within the PRC should pay attention to language used and investigate whether projects proposed to enhance conservation or poverty alleviation do not involve nomad settlement, building of large dams, fencing of grasslands, or similar.

-  The major donor governments, including the European Union, should maintain and, where possible, expand targeted programmatic assistance for Tibetans, including: support for sustainable, culturally appropriate development assistance to Tibetan communities; educational and cultural exchange and development programs targeted to Tibetans, both in Tibet and in exile. Donors should establish legally binding project principles to govern official development assistance carried out in Tibetan areas. Concerned countries should specifically task their embassies and consulates to expand their outreach to Tibetan communities and monitoring of the situation in Tibet, including by maintaining a specific action officer on Tibet in the embassy.

-  Human rights law imposes procedural obligations on States in relation to environmental protection, including duties: to assess environmental impacts and make environmental information public; to facilitate public participation in environmental decision-making, including by protecting the rights of expression and association; and to provide access to remedies for harm States should provide access to environmental information. China must urgently bring its policies in conformity with these international standards, particularly with regard to its land use policy in Tibet.

-  States have an obligation to provide for an effective remedy for violations of protected rights, and human rights bodies have applied that principle to human rights whose enjoyment is infringed by environmental harm. China must compensate those who have suffered from environmental harm, in particular those who have lost their livelihoods or who have been exposed to toxic substances or waste.

-  States have obligations not only to refrain from violating the rights of free expression and association directly, but also to protect the life, liberty and security of individuals exercising those rights, including when they are exercising their rights in connection with environmental concerns.¹³⁰ China must respect the rights of protesters, in particular refrain from using disproportionate force.

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¹³⁰ Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox, 'Mapping report', 30 December 2013, A/HRC/25/53; also note Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox, 'Compilation of good practices', A/HRC/28/61 February 2015.



Tibet from space, showing the mountain ranges and vast icefields. Image courtesy of NASA. Daniel Miller, an expert on Tibet's nomads, has published a series of images of Tibet from space in his book 'Tibet from Space: Astronaut Photos of the Tibetan Plateau and Himalaya'.



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