

# The (degrading) third pole

TENZIN NORBU

SITUATED at the heart of Asia, with an average elevation of 4500 metres above the mean sea level, Tibet stretches for almost 3,000 kilometres from West to East and 1,500 kilometres from South to North. The plateau is ringed by fourteen high mountain ranges – from the southern end, the mighty Himalaya, Khawakarpo and Minyak Gankar mountain range. The glacier-fed rivers originating from these mountains make up the largest river run-off from any single location in the world. Despite its cold environment, for thousands of years the Tibetan people have occupied this plateau and created cultural landscapes based on the principles of simplicity and non-violence that are in harmony with the environment. One only needs to look at its map to figure out how the Tibetan Plateau dominates the geography of Asia. It is one of the most environmentally strategic and sensitive regions in the world.

Tibet referred to as ‘The Third Pole’ and ‘The Water Tower of Asia’ reflects the significance of its snow capped mountains, its water resources

and its alpine grasslands. Since time immemorial, the plateau holds the Hindu Kush Himalayan Ice Sheet, considered as the largest ice mass outside the two poles. Its plateau contains more than 45,000 glaciers covering an area of 105,000 km<sup>2</sup>. The plateau is also the fountainhead for many rivers that flow into Asia (India, Inner Mongolia, Bhutan, Nepal, Bangladesh, China, Pakistan, Thailand, Laos, Myanmar, Cambodia and Vietnam). As a result, approximately 1.3 billion people directly depend on the health of these major rivers. The total river basin area is estimated at above six million square kilometres. In recent years, due to climate warming and human interventions, these majestic landscapes, ancestral pastoral cultures and river systems are silently degrading before our own eyes.

Over the last few decades, global warming is taking its toll on glaciers, permafrost, frozen soils, lakes, grasslands and the whole biotic community in Tibet. On a micro level, its future implications are far more threatening; the ongoing flow of rivers

that drains its vast basin could become seasonal and the change in the rainfall pattern will affect the livelihoods of tens of millions of people, creating more regional tension. It is estimated that the glaciers in Tibet are currently melting at a rate of 7% annually. Similarly, a separate study by a NASA scientist (2010)<sup>1</sup> revealed that 20% of Tibet's glaciers have retreated in the past 40 years and, if the current trend continues, more than 60% of the existing glaciers could be gone in the next 40 years.

Even China's National Climate Change Programme report (2007)<sup>2</sup> has mentioned that the area of glaciers and frozen earth is expected to decrease more rapidly and it is estimated that the glacier area in western China will decrease by 27% by the year 2050. The same concerns have been shared by the IPCC (Intergovernmental Panel on Climate Change) in one of its reports, warning that such meltdown will result in massive flooding followed by severe droughts.

Rivers originating from Tibet flow to more than ten countries and play a vital role in the environmental services and social economy of each country. These rivers (Table 1) not only enable Tibet to become a strategic platform in exercising its dominance

over the lower riparian states but also attract many secondary and primary industries from mainland China. This is due to the fact that nearly half the GDP (45%) and 51% of the industrial output of China is from water scarce provinces and municipalities. Moreover, these water scarce regions of China house 38% of the installed power capacity and 47% of the coal fired power plants. According to the 2009 China Statistical Yearbook,<sup>3</sup> Tibet scored in highest value of water availability with 139,659 m<sup>3</sup>/person/year compared to Beijing and Tianjin, both averaging only 127 m<sup>3</sup>/person/year.

Currently, all the major rivers and their tributaries that flow from Tibet are dammed and this dam building frenzy in the western Tibet is creating huge controversy and doubt about these projects acting as a stepping stone in expanding China's ambitious water transfer projects beyond the initial plan. The current expansion of the railway network connecting Beijing with the rest of Tibet paves the way for logistical support and transportation of damming inventories, if required, in due time. So far, China has built over 87,000 hydro dams, but the issue of safety has always been treated as a sensitive subject. The numerous incidents at a

number of dams and reservoirs have cast doubt on the quality of these projects, but they are rarely reported to the general public.

According to the *South China Morning Post*, January 2013,<sup>4</sup> the Chinese state council has released an energy sector blueprint for 2011-2015 in which they have decided to construct at least 54 hydro power stations with a total capacity of 120 gw on the upper reaches of Driчу (Yangtse), Zachu (Mekong) and Salween. It clearly disregards the geological risks, global biodiversity, resettlement and impacts on downstream communities. This plan also includes the reopening of previously shelved dam projects on the Salween river due to environmental concerns.

By just overlaying the UN seismic hazard zone map and the locations of these dams on the western rivers of Tibet, clearly sends an inevitable signal that those living in the shadow of these dams are at the mercy of nature. According to the report published by Probe International (2012), more than 90% of dams that are built, under construction or proposed for the rivers that flow from Tibet are located in zones of very high or moderate seismic hazards.

In her latest book, *China's Environmental Challenges* (2012),<sup>5</sup> Judith Shapiro, a renowned Chinese scholar

**TABLE I**  
**Major Rivers Flowing From Tibet**

<i>Tibetan name</i>	<i>Common name</i>	<i>Watershed Regions/ Countries</i>
Machu	Yellow River	Tibet, China, Inner Mongolia
Driчу	Yangtze	Tibet and China
Zachu	Mekong	Tibet, China, Vietnam, Laos, Cambodia, Thailand
Gyalmo Ngulchu	Salween	Tibet, China, Burma, Thailand
Yarlung Tsangpo	Brahmaputra	Tibet, India, Bangladesh
Macha Khabab	Karnali > Ganga	Tibet, Nepal, India
Langchen Khabab	Sutlej	Tibet, India, Pakistan
Senge Khabab	Indus	Tibet, India, Pakistan
Bhumchu	Arun	Tibet, Nepal, India
Lhodrak Sharчу	Manas	Tibet, Bhutan, India, Bangladesh

Source: 'Tibet: A Human Development and Environment Report', DIIR, Dharamshala, 2008.

1. NASA, Jordan Camp, 'Melting Glaciers of Tibet', Climate Change Research at NASA - Goddard Space Flight Center, 2010.

2. National Climate Change Program, <http://www.china.org.cn/english/environment/213624.htm>

3. China Statistical Year Book 2009, <http://www.stats.gov.cn/tjsj/ndsj/2009/indexeh.htm>

4. 'Ban lifted on controversial Nu River dam projects,' <http://www.scmp.com/news/china/article/1135463/ban-lifted-controversial-nu-river-dam-projects>

5. Judith Shapiro, *China's Environmental Challenges*. American University, 2012.

writes, 'Severe environmental problems are occurring in ethnic minority communities on the periphery of the country, where grab for resources is thinly disguised as development program.' She further adds, 'When we take a closer look at these regions inhabited by ethnic minorities, we suspect that the government attempts to develop infrastructure are often no more than strategies to extract natural resources at the expense of a minority, marginalized people.'

*Deforestation:* The plateau once possessed one of the oldest forest reserves in Central Asia and a wealth of over 5000 species of higher plants; these forests were indiscriminately cut down and transported to China. It was not until the disastrous Driчу (Yangtse) flood in 1998 that China realized it was paying the price of stripping Tibet's forest. That flooding killed over 10,000 people and left 240 millions affected by its waters and destroyed over a million hectare of farmland and homes in China. Only after the forest had been entirely stripped did the large scale logging finally stop in the name of water conservation. Despite the unconditional logging ban announced by the government in September 1998 on an area of 4.6 million hectares along the Driчу (Yangtse) basin in Tibet, commercial felling of trees still continues. Even though the Chinese government claims to have invested a huge amount in various reforestation projects (White Paper, July 2011),<sup>6</sup> most of these new tree plantation are of exotic tree species (fruit trees, rubber and eucalyptus) rather than the indigenous varieties. Some Chinese researchers argue that these new exotic tree crops, along with a significant alteration in the age structure

6. White Paper: Sixty Years Since Peaceful Liberation of Tibet (2011), [http://www.china.org.cn/government/whitepaper/node\\_7122743.htm](http://www.china.org.cn/government/whitepaper/node_7122743.htm)

of the standing forests, is seriously compromising the ecological services provided by forest ecosystems.

*Conversion of grassland to croplands:* The overall plan during the periods of Collectivization and Household Responsibility System was to maximize the agricultural production from the grasslands. During that era, almost 20 million hectares (0.2 million sq km) of grassland in Tibet and Inner Mongolia were converted to croplands by state owned farms, state owned forestry operations, and other state owned enterprises. They were all labelled 'Newly Claimed Virgin Croplands' in the 1950s and the trend continued for another few decades. These grasslands are now severely degraded.

China's grassland policies over the past several decades have not only destroyed these grasslands but also undermined the age-old ancestral grassland stewardship provided by the *drogpas*. These policies have not only reduced the mobility of the nomads and their herds, but are also responsible for overgrazing some parts of the grasslands.

*Resource extraction:* Tibet's rich mineral deposits have become a resource curse for the local residents and ecosystem. Since the late '60s, these mineral deposits have been exploited to various degrees, mostly under poor environmental norms and regulations. Among the minerals extracted, copper, chromium, gold, lead, iron and zinc are of greatest interest to Chinese and other foreign miners operating on the Tibetan Plateau. These are being mined to different extents at various locations throughout the Tibetan Plateau. Over the past few years, the Chinese state government has shown more interest in and has invested in the extraction of lithium ores (*lithium carbonate*) on the Tibetan Plateau.

The locals residing in and around the mining sites have no reason to celebrate since they know such projects often pollute the local water source, grab their grazing lands and with very little or no compensation. The mining companies pay little respect to the local culture and the sanctity of the landscapes. They have been known to extract minerals and other resources from holy lakes and sacred mountains which local Tibetans have revered for generations. Such negligence and disrespect creates strong social tension, distrust, anger, desperation and fear among the local residence. The 78th self-immolation of Tsering Dhondup (20 November 2012)<sup>7</sup> that took place at the entrance of a mining site in Amchok, Labrang in the northeast part of Tibet, clearly sends a strong signal of a 'non-harmonized society.'

Whenever the Tibetan communities attempt to put forward their grievances in petitions to higher authorities against the miners, they are either ignored, harassed or even fired upon by the police. In the frequent protests by Tibetan villagers, their immediate concern has often been the damage done by miners to the local streams, rivers, holy mountains and pasture land. Without any concern or hesitation, miners dump the mine tailing and chemical effluents in the local river with no special attention given to and action from the local authorities. For instance, in the Kumbum monastery in Amdo (Ch: Qinghai) in 2011, the local tap water detected high lead (Pb) concentrations due to mining activity

7. One more Tibetan Self-Immolates at Amchok in Labrang, <http://tibet.net/2012/11/20/one-more-tibetan-self-immolates-at-amchok-in-labrang/>

8. Fred Scholz, *Nomadismus. Theorie und Wandel in der sozio-ökologischen Kulturweise*, (Nomadism: theory and change of a socio-ecological mode of culture), 1995

near the local water source.

According to German scholar Fred Scholz,<sup>8</sup> nomadism is a natural response to a generally inhospitable physical environment, where pastoral nomads have had to develop a complex system of using rangeland resources and maintaining grazing capacity of these barren lands. As such, the mobility was the very essence of herding, where herders or the nomads are needed to move their animals regularly to make use of the spatial and temporal patchiness of grassland resources.

Pastoralism on the Tibetan Plateau is an adaptation to a cold environment at elevations above the limit of cultivation. For centuries, Tibetan pastoral nomads or drogpas have successfully maintained a sustainable lifestyle, travelling from winter to summer pasture lands and from autumn to spring pasture lands. The grasslands on the Tibetan Plateau represent one of the last remaining high altitude agro-pastoral regions in the world.

In response to the degrading grasslands, Chinese policymakers have offered only one explanation: the nomads were overstocking beyond the carrying capacity of the pastures, but they shy away from accepting responsibility for the compulsory overstocking, fencing etc. during the commune system. For decades, other policies such as destocking and rodent poisoning were enforced against the religious sentiments of the herders. For these pastoralists, their herd size is the only wealth, security, insurance, capital and collateral against loans.

Other researchers also cite rainfall – rather than livestock numbers, past or present – as the major determinant of the conditions of the grass-

land in Tibet. Many researchers have indicated in their field study reports that removing the livestock from these grasslands and labelling nomads as ‘ecological migrants’ will not help restore these degraded pastures. They have indicated positive connections between the grazing herds of the nomads and the grasslands in terms of the soil carbon-nitrogen ratio. Although the stated objective of *tuimu huancao* is to grow grass and thus conserve watersheds, careful scientific observation shows that when all grazing is removed, the biodiversity of grasses diminishes, medicinal herbs are driven out by toxic weeds, and woody shrubs make the land unusable. The herders point to weather changes, rodents, and mining activities as important factors causing grassland changes.

A survey conducted in 2011 by Gallup<sup>9</sup> in China revealed that most of the adult Chinese prioritize environment over economy. The only question remaining unanswered is whether or not the new Chinese leaders will act accordingly.

The Tibetan Plateau is the land bridge connecting South Asia with East Asia. The very survival of almost 1.3 billion people depends on the water resources originating from the Tibetan Plateau. Downstream users of water originating in Tibet should establish a regional forum to create policies on transboundary issues that effectively safeguard access and quality of water, at a time of accelerating glacier melt and damming activities.

The impacts on Tibet’s landscape and its natural resources due to natural causes, land use policies and large-scale development will threaten the future food security of many nations and their relations to China. A healthy and sustainable Tibetan Plateau will not only benefit the entire Asian continent but also help in promoting peace and harmony within the region.