



ENVIRONMENT AND DEVELOPMENT
IN TIBET

A CRUCIAL ISSUE

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“The world grows smaller and smaller, more and more interdependent today more than ever before life must be characterized by a sense of Universal Responsibility, not only nation to nation and human to human, but also human to other forms of life.”

His Holiness the XIVth Dalai Lama

Introduction

Tibet, commonly known as the ‘roof of the world’, is situated at the very heart of Asia. It is one of the most environmentally sensitive areas of the continent, lying to the north of India, Nepal, Bhutan and Burma, the west and south of China. Covering a total area of around 2.5 million square kilometres—more than two-thirds the size of India, Tibet stretches 2,500 kilometres from west to east and 1,500 kilometres from north to south. It has an average height of 3,650 metres above sea level and many of the peaks reach beyond 8000 metres, such as Mount Everest (Mt. Chomolungma)— the world’s tallest.

Prior to the Chinese occupation, Tibet was ecologically stable. Environmental conservation through human intervention was never felt before partly due to the sparse human population and partly due to the Tibetan way of life, which has been strongly influenced by spiritual beliefs in the interdependence of both living and non-living elements of the earth. Tibetans strive to live in harmony with nature. These beliefs are strengthened further by the Tibetan Buddhists traditional adherence to the principle of self-contentment: the environment should be used to fulfill one’s need and not one’s greed.

Over 5,000 species of higher **plants** grow in Tibet, many of these are rare and endemic. These plants include about 2,000 varieties of medicinal herbs used in the traditional medical systems of Tibet, China and India. Rhododendron, saffron, bottle-brush tree, high mountain rhubarb, Himalayan alpine serratula, falconer tree and hellebelle are among the many plants found in Tibet.

There are 400 species of rhododendron on the Tibetan Plateau, which make up about 50 percent of the world’s total species. The Tibetan Plateau also consists of over 12,000 species from 1,500 genera of vascular plants.

In Tibet, there are over 532 different species of **birds** in 57 families, which is about 70 percent of the total families found in China. Some of the birds include: storks, wild swans, Blyth’s kingfisher, geese,

ducks, shorebirds, raptors, brown-chested jungle flycatchers, redstarts, finches, grey-sided thrushes, parrotbills, wagtails, chickadees, large-billed bush warblers, bearded vultures, woodpeckers and nuthatches. The most famous being the black-necked crane called “*trung trung kaynak*” in Tibetan. About 62 percent of the world total population of black-necked crane are found on the Tibetan Plateau.

The mountains and forests of Tibet are home to a diverse range of animal life. Early travellers in Tibet marvelled at the abundance of wildlife on the Tibetan Plateau. Some of the **animals** include Tibetan antelope, gazelle, argali sheep, wild ass, wild yak, takin, serow, asiatic black bear, giant panda, red panda, wolves, snow leopards, snow monkey and others.

Tibet had rich and untouched **mineral** resources prior to the Chinese occupation. It is traditionally believed that the mineral resources are the wealth of the spirits of the mountains, water and forests, and any disturbance to their wealth would bring disease and bad omens to the land and its people. About 126 different mineral deposits are found in Tibet which accounts for a significant share of the world’s reserves of gold, chromites, copper, borax, iron, oil and natural gas.

Tibet is the source of many of Asia’s principal **rivers**, including the Drichu (Yangtze), Zachu (Mekong), Machu (Huang He) or the Yellow River, Gyalmo Ngulchu (Salween), Bumchu (Arun), Yarlung Tsangpo (Brahmaputra), Sengye Khabab (Indus), Langchen Khabab (Sutlej), Macha Khabab (Karnali), and the Irrawaddy. These rivers flow into eleven countries: China, India, Pakistan, Nepal, Bhutan, Bangladesh, Burma, Thailand, Vietnam, Laos and Cambodia. These rivers and their tributaries are the life-blood of millions of people in Asia.

More than 1,500 natural **lakes** are found in Tibet. Among the more prominent lakes are Mapham Yumtso (Mansarovar), Namtso, Yamdrok Yumtso and the largest, Tso Ngonpo (Kokonor Lake).

Prior to 1950, Tibet's **forests** covered 25.2 million hectares. Most forests in Tibet grow on steep, isolated slopes in the river valleys of Tibet's low-lying southeastern region. The principal types are tropical montane and subtropical montane coniferous forest, with evergreen spruce, fir, pine larch, cypress, birch and oak among the main species.

With the invasion of Tibet, the nature-friendly way of life of the Tibetan people was trampled upon by a materialist Chinese ideology. China claims that Tibet is experiencing growth and prosperity, but the reality is that, under the Chinese rule, Tibetans are impoverished, marginalised, and excluded; the sensitive and globally important ecology of Tibet is deteriorating; and many plant and animal species face extinction. This booklet provides an overview of crucial issues with regard to the environment and development in Tibet. To address these issues adequately will require many changes in the Chinese policies and programmes being implemented in Tibet.

China's Western Development Programme

President Jiang Zemin announced China's campaign to develop the western half of China in 1999. A year later, it was officially announced that exploitation of minerals and other natural resources was not only critical for the continued development of China's economy, but also for ensuring the continued stability of local societies while contributing to China's ethnic and national unity. Central to the first phase of Western Development Programme (2000-2005) is investment in 'hard infrastructure' such as the Gormo-Lhasa railway, potash fertiliser plant (\$ 338 million), natural gas pipeline stretching 950 km to Lhanzhou (\$ 300 million), hydroelectricity power stations in the South west.¹ To lure foreign investments in these and other projects, Beijing draw up preferential policies for them such as exemption of tax for importing related equipments and exemption of value-added tax. It is noted that whether in the construction of infrastructures and high-tech enterprises in Tibet, non-Tibetans are provided incentives to take part in it.² Local people were forced to give

away their land for these developmental projects. The residents of rural Songduo county protested against the seizure of their land in the name of the “Great Western Development” programme.³

Limited priority is given to ‘soft infrastructure’ such as health, education, and local human capacity-building that would enable greater local employment and participation in the modernization process. The Western Development Programme gives little priority to investment in local agriculture and livestock, although the majority of the western population, especially the non-Chinese ethnic populations experiencing the most acute poverty, are in these two sectors.

An example cited by the US-based Tibet Poverty Alleviation Fund is the upgrading of the Yangpachen-Lhasa segment of the Gormo to Lhasa highway. It is a showcase of technologies reliant on importing capital, technology, and labour into Tibet, without transferring any skills, jobs, or capital to Tibetans. This 80 km section of the road passes through a river gorge and was completely rebuilt with extensive stone abutments and lining work. It was carried out by large numbers of migrant Chinese masons and other highway workers at an estimated cost of about 400 million yuan (\$48 million). During June and July 2001, large numbers of Chinese road construction workers were also engaged in the upgrading of main roads in Lhasa itself. The construction work was consistent with a pattern seen in most Tibetan urban areas over the last decade with central or other provincial government financing. These modern road and urban building construction designs, techniques and materials were unfamiliar to local Tibetan workers, hence involved the employment of migrant Chinese workers familiar with the techniques. The Tibetans could have been trained and employed, but they were instead excluded.

The initial selection of priority infrastructure investment projects under the Western Development Programme does not appear to correspond with the priority needs of the poorest populations in the traditional agricultural and livestock sectors. One of main findings of the research on the China Western Development Programme by in-

dividual researcher was that the impact of WDP widens disparities and deepens social exclusion of minorities.⁴

To the extent that the Western Development Programme is oriented towards the infrastructure needs of the modern sector, and is a source of additional employment for Chinese migrants, it will further exacerbate income disparities between Chinese immigrants and local Tibetans. The only Tibetans prospering as a result of China's leap-style intensive investment in Tibet is the small group of Tibetan working in government departments and state enterprises. Their number, based on Chinese statistics, is no more than 100,000 in the "Tibet Autonomous Region" (TAR). Increased investment and trade in natural resources is central to the second phase (2005-2015) of the programme. An example is the Yulong copper mine in Tibet. China must follow the road of sustainable development in accordance with the principle of bringing coordinated development of population, resources, environment and economic development.

Railway and Colonisation

In the first decade of its occupation of Tibet, China built rail lines connecting the northern Tibetan area of Amdo (Chinese: Qinghai) with its industrialised coastal areas. This, Tibetans maintain, is primarily responsible for the colonisation of Tibet, as it accelerated the influx of Chinese settlers and resource exploitation in Amdo. Amdo's population increased from around 1.5 million in 1949 to more than 5 million today. Gormo, the terminus of one rail line, was once a vast pastoral land inhabited by a few hundred Tibetan nomads. Today it is the second largest town in Amdo with a population of 200,000 of which only 3,600 are Tibetans.

In 1994, Beijing's leaders discussed a project linking Lhasa City, the Capital of Tibet, with the rest of China by rail. During China's Ninth Five-Year Plan (1996-2000), route survey and feasibility studies on the railway to Lhasa were conducted. As a result, the Tenth Five-Year Plan allocated a budget for construction of a railway line

between Gormo to Lhasa. On 29 June 2001, China launched its second railway project in Tibet connecting Lhasa, in the heart of Tibet, with Gormo and from there the industrial Chinese cities of the coast.

Aside from strategic concerns, one of the most serious social impacts of the railway, which runs eight trains a day in each direction, is the influx of Chinese immigrants. Just as Gormo was transformed by the arrival of rail, Lhasa and the inter-lying areas, face tremendous population pressures. The authorities of “Tibet Autonomous Region” already predicted expansion of Lhasa City from the current 53 sq km to 272 sq km within the next 10 years. The policy of resettling Chinese into Tibet is a tragedy not only to the Tibetan people but also to Tibet’s fragile ecology. First, Tibet’s sensitive ecology can in no way support the huge influx of population, especially if this population lives the typical consumptive lifestyle characteristic of Chinese cities of the east. Second, the practical realities of Chinese development also means that the Tibetan people not only become a minority in their own land, but a marginalised, excluded, repressed, and unrepresented people.

Chinese settlers arrive on one-way tickets, priced at as little as \$ 49 to come all the way from Beijing. They are fortune seekers, often desperately poor and displaced from the countryside by China’s voracious demand for land for urbanisation. It is estimated that the train to Lhasa brings five or six thousand people a day to Lhasa during the peak season, but when one observes the trains leaving Lhasa for China only two or three thousand people are aboard. Those who stay behind are fortune hunters, seeking any niche they can find, often by elbowing aside Tibetans from even small street stall trading. Migrant workers from China are eager to secure railway-related jobs all along the rail route. Statistics indicate that towns in Nagchu prefecture, an area where maximum portion of the railwayline exists, has increased to more than 25 from only two in 2001.

In regard to the impacts of the railway on the ecology of the Tibetan Plateau, Beijing earmarked a \$ 190 million for environmen-

tal protection along the railway. Despite their pledges to safeguard the plateau, there have been reports of environmental problems. For example, discarded supplies and junked equipment were conspicuous along the railway line. Rubber tyres, scrap metal, chunks of cement, leftover tubes, plastic bags and bottles were among the garbages left beside the tracks.⁵



Yaks wandering across the railway track

Whether China actually knows how to minimise and repair the damage currently underway as the railway crosses the sensitive Tibetan wetlands is doubtful. China's white paper entitled *Ecological Improvement and Environmental Protection in Tibet 2003* states that there are '13 key technical problems now undergoing scientific research, of which half concern environmental protection'. However, the precautionary principle, that is at the core of all international biological conservation programmes, states that before destructive interventions begun, solutions should first be established.

The rail route, as the Chinese white paper concedes, cuts through three officially-protected nature reserves of Hoh Xil, Chumarleb and Soga—all habitats of endangered antelopes and gazelle. Underpasses—China's technical solution to the bisection of their migration routes in the hope that the herds—despite a schedule of eight trains each day in each direction—will pass beneath the busy tracks. But the nomads in Nagchu, Damshung, and Yangpachen reported mass deaths of animals under the elevated bridges. The gap between the pillars supporting the bridges are too small for animals to pass through. Sheep, yaks, Chiru (Tibetan antelope) and kyang (wild ass) graze in huge herds in these areas. When the animals rush between the pillars, stampedes occur, killing scores of animals, especially the weaker and younger

ones. The wild yaks have been seen wandering across the railway line risking railroad accidents and injury to themselves. However, the Chinese authorities are making the claims otherwise to the international community but their propaganda exposed when Xinhua, China's state-run news agency, recently apologised for publishing the fake photo of Mr. Liu Weiqing featuring dozens of pregnant antelope galloping peacefully across the Tibetan landscape, as the train ran beside them.⁶

Further extension of the railway line to Shigatse is expected to be completed in 2010. A committee was set up for the extension work.

Population Transfer

One of the greatest threats to Tibetan people, culture, and environment is the massive influx of Chinese civilians and military personnel into Tibet, especially through population transfer programmes. According to Sir Hugh E. Richardson, the last British and Indian Head of Mission in Lhasa there were no Chinese in Tibet except for a few traders and some Muslim butchers at Lhasa. A small party managed to get into Tibet in 1935, regarded by the Tibetans as an unofficial liaison office; and in 1949 they were expelled by the Tibetan Government.⁷ However, today their population has skyrocketed and Chinese in Lhasa outnumber Tibetans.

Based on China's official statistics, the total population of Tibet was 10 million in 2000, and these statistics, as many international observers have pointed out, chronically underestimate military personnel and the large unregistered floating population of displaced Chinese peasants seeking work. Population explosion in Tibet has its impact on Tibet's fragile ecology and its many species of plant and animal. The fast diminishing habitat of the panda and other endangered wildlife is a clear indication of the pressure on the entire plateau.

The most fundamental impact is that the Tibetan Plateau must now sustain a growing human population. Beijing's solution is to pour in more subsidies and enforce extensive urbanisation. Other areas of China that receive China's internal migrant inflow, including the major

cities, maintain regulatory control on immigrant populations, but there is no such control exercised in the nominally autonomous Tibetan areas. No calculation has ever been made as to how many human beings the plateau can sustain, without degradation and overload.

A coherent population policy is much needed, especially as the migrant influx expects to consume at levels comparable to urban Chinese populations elsewhere. Because control over the plateau is fragmented among five provinces, there is no overall planning for this distinctive region in its entirety. Since the right of Tibetans to participate fully in development planning is neglected, there is no one at present to speak up for the plateau as a whole.

For fifty years, China's state planners and economists negatively evaluated Tibet as having 'extremely low quality of human resources'. China's policy solution to this perceived problem is not to invest in free universal basic education, as required under the UN's developmental goals. Beijing has taken upon itself the task and responsibility of improving the quality of human capital through transfers of skilled cadres and personnel, called 'pioneers' to help develop Tibet. An alternative would have been to invest in education of the Tibetan population, but the UNDP China Human Development Report 2005 shows this has not been done.

Migration initially began during Mao's chairmanship when young educated Chinese youths were sent to the countryside to help the peasants. At this time, Beijing sent in large numbers of skilled and technical personnel to Tibet to modernize and develop Tibet and its economy. But this has had a huge downside, which was the influx of Chinese settlers into the Tibetan region. There are now millions of Chinese in Tibet, especially in eastern Tibet. In spite of Tibet's vast land area it can not support the increasing population. Tibet's highland has less than two percent of arable land.

China never took into consideration the pre-invasion Tibetan economy as a basis for development. A new administrative and bureaucratic system was built and staffed, in which decision-making



Transformed Gorno: a city of immigrants

powers were firmly in the hands of non-Tibetans. In September 2006, the Chinese government reduced the number of Tibetans on Lhasa's most powerful ruling

body. It is the lowest proportion of representation of Tibetans since 1966. For the first time in 25 years, the Lhasa committee is being led by Chinese communist cadres. Sophie Richardson, deputy Asia director at Human Rights Watch observed that China seems to be pushing Tibetans out of positions of authority and Beijing's promotion of ethnic Chinese leaders fundamentally compromises Tibetans' right to participate in Lhasa's most powerful institution.⁸

This institutional arrangement, unprecedented in the history of Sino-Tibetan relations, necessitated the largest influx of Chinese population into the Tibetan region to carry out their intended development work. This is why, for 49 years Beijing had to pump in enormous funds and subsidies to sustain the burgeoning population of urban cadres and sojourners in Tibet.

The migration of Chinese settlers was reinforced during Deng Xiaoping's time, when he revealed while visiting the United States in 1987: "Tibet cannot develop on its own. It should seek help from fraternal provinces and municipalities [in China]. We need to get large numbers of Han comrades in Tibet so that they can impart scientific and technological know-how, share their scientific management expertise, and help Tibet train scientific, technological, managerial personnel to speed up its economic development."⁹

China's Western Development Programme has relaxed China's hukou residential registration system, to make it easier for Chinese migrants to transfer to Tibet. The TAR People's Congress, despite nominal legislative powers, seems unable to regulate migration, even though Hong Kong, Beijing and Shanghai do regulate their migrant inflow. Today, due to the state relaxation of the hukou system and increase in massive infrastructure projects in the Tibetan region, connecting Beijing with the heart of Tibet by railway, the influx of Chinese settlers has accelerated. Chinese migration has reached such an extent that some Tibetan officials inside Tibet have voiced their concerns over threat of marginalisation of Tibetans in economic competition. This unfortunate development is supported by documented accounts of many foreigners and organizations working in the Tibetan region.

In 2000, China applied for a \$ 40 million loan from the World Bank to resettle 60,000 ethnic Chinese into northeastern Tibet. However, a worldwide campaign against this project persuaded the World Bank to deny the loan.

As a result of China's population transfer policy, Tibetans have been marginalised in economical, educational, political and social spheres and the rich cultural tradition of the Tibetan people continues to be threatened.

Wildlife Decimation

Prior to the Chinese occupation of Tibet, hunting of wildlife was decried in Tibet and only indulged in by few for survival. A few Tibetans hunted animals to use their body parts in traditional medicine, not for commercial profit but solely to cure some specific diseases. Even then, killing was sustainable and carried out on a very small scale not only because of laws against hunting, but more importantly because of spiritual and cultural restrictions. From 1642, in the tenth month of every year, a Decree (Tsatsig) for the Protection of Animals and the Environment used to be issued in the name of His Holiness the Dalai Lama.



Fresh carcasses of Tibetan antelopes found in Ngari Prefecture

In the aftermath of the occupation of Tibet, Chinese officials have failed to translate Tibetan Buddhism's belief about the interdependence of all living and non-living elements of the nature into envi-

ronmental policy. Chinese have actively engaged in hunting wildlife for meat and for the lucrative profits from trade in animal parts and products. Further, trophy hunting of wildlife including endangered species has been actively encouraged in the 1980s and 1990s. Rare Tibetan animals, such as the snow leopard are hunted for their fur and sold for large sums of money in the international market.

Tibetan antelopes (Tib: Tsoe) have been the target of rampant poaching for their wool known as shahtoosh. To make one shahtoosh shawl three to five antelopes have to be skinned. The animal was recognized as an endangered species and protected under the Convention on the International Trade in Endangered Species of Wild Fauna and Flora since 1979. However, under the Chinese rule, their number has continued to diminish on the verge of extinction due to indiscriminate slaughtering of the animals by poachers. According to a group of western adventurers, while they were trekking along the Khunu mountain range bordering Gertse district of Ngari in early 2007, they witnessed some non-Tibetan immigrants on their jeeps and bikes chasing Tibetan antelopes. The travellers also found fresh carcasses of over 20 Tibetan antelopes that had been slaughtered and skinned for their precious shahtoosh wool.¹⁰

Wild yak is listed as receiving "first" grade of protection under Chinese law and is also listed under "Appendix I" of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Nonetheless, the Chinese State Forestry Administration has somehow determined that wild yak reached unsustainable levels and should be hunted. A large number of antelope, gazelle, blue sheep and wild

yak have been hunted to supply meat to markets in China, Hongkong and Europe.

The Chinese government invites bids from foreign tourists for the right to hunt endangered species under a kill-to- conserve campaign. The auction, which is overseen by the state forestry administration, has been introduced to raise funds for conservation and to cull species that reach unsustainable levels in certain areas. The starting price for a permit to shoot a wild yak, of which there are fewer than 15,000 remaining in the world, is \$ 40,000 (£ 21,000). Bids to hunt an argali, a wild sheep—prized for their massive spiral horns—begin at \$ 10,000. The horns of endangered antelopes and deer, which are sold for use in traditional medicine and as aphrodisiacs, are even cheaper.¹¹

Today, China speaks about environmental protection and wildlife conservation and has declared Chang Thang region as a nature reserve. By the end of 2000, 17 state and provincial-level nature reserves had been built in the “Tibet Autonomous Region” accounting for 40 percent of the total area of nature reserves within the People’s Republic of China (PRC). All this sounds impressive on paper, but the 2000 State Environmental Protection Administration (SEPA) report gave the total staff working in nature reserves in ‘TAR’ as 163—the lowest among all of China’s provinces. These staffs lack training and equipment to control the reserves. It is evident that despite designating large areas of the Tibetan Plateau as nature reserves, there exists a troubling gap between official policy and actual implementation.

There are further contradictions in wildlife protection and hunting tours. A disturbing discrepancy between the official policy and on-the-ground reality of wildlife protection exists. For example, a senior staff of the Qinghai Wildlife Protection Association acknowledged that though they give importance to wildlife protection, but encourage to hunt old and weak animals.¹²

There was an outcry upon Tibetans in Tibet dressed with animal skins by environmental activists. Following His Holiness the Dalai

Lama's advice to Tibetans against the use of animal hides, there was a massive campaign to burn dresses trimmed with animal hides and fur in Tibet.¹³

Despite these popular campaigns, Tibetans are being forced by the Chinese authorities to wear traditional clothes trimmed with animal skins such as tiger skins at public gatherings and official functions. Tibetan cadres especially Tibetan television broadcasters, working under the Chinese government are threatened of consequences if they do not wear the traditional dresses with animal skins. Tibetans are also offered loans by the Chinese local banks to buy the traditional dresses trimmed with animal skins.¹⁴

A genuine effort is urgently needed for the implementation of strong environmental legislation and policies in Tibet. One sure way of succeeding in the protection of wildlife is through the involvement of local Tibetans, who know the terrain best and have genuine interests in nurturing the landscape and protecting its biodiversity.

Mining and Resource Exploitation

Mining in Tibet is spreading widely without consulting the local Tibetans and without proper environmental impact assessment. Beijing has increasingly enticed foreign investment and technical expertise into the exploitation of mineral resources in Tibet. Tibet comprises 1/8th of the land area of China, and is rich in mineral ores. Tibet's reserves of chromite, copper, magnetite and boron take the first, second, third and fourth places respectively as a share of China's total deposits. The reserves of copper are likely to climb to the number one position in China after further exploration efforts. Tibet also has rich reserves of lead, zinc, gold, petroleum, iron and other minerals. At present, Tibet's output of chromite makes up 80 percent of China's total. Mining has been listed as one of the key industries in the 10th Five-Year Plan of the "Tibet Autonomous Region".¹⁵

Much of Tibet's minerals are found in belts of ophiolite rock which traverse the Tibetan Plateau in three parallel lines, each line

belonging to a major river valley. The Norbusa chromite mine near Tsethang and Shetongmon (Ch: Xietongmen) copper mine lie in the Yarlung Tsangpo (Brahmaputra) suture zone, along the first belt line. The second line of the ophiolite belt runs from far western Tibet to the headwater of Gyalmo Nyulchu (Salween). The third ophiolite belt line begins further north and stretches to the valley of upper Drichu (Yangtze). Any major problems caused by mining in these belts will have serious implications for downstream water users and may present cross-border legal issues.¹⁶

Significant environmental concern lies in the mining of two minerals: copper and chromite. Of particular concern are the important reserves of these two minerals currently under development and that are easily accessible. Some examples of these reserves include: the copper deposits in Shetongmon, which is close to Shigatse, the second largest city of Tibet; the chromite deposits at Norbusa, close to the town of Tsethang; and the chromite deposits at Dongchao (Ch: Dongqiao), close to the rail line at the village called Draknak (Amdo County) in Nagchu Prefecture.

The Shetongmon gold and copper mine in Tibet, where exploration is currently going on, is located between the Gandesi Mountains and Brahmaputra River, in an area approximately 240 km southwest of Lhasa. Continental Minerals from Canada is investing into this project with the announced intention of mining 10 million tons of ore a year, from which 50,000 tons of copper a year will be smelted. The water supply to this mine will be drawn from the Yarlung Tsangpo (Brahmaputra river), which is less than a kilometer downhill from the mine. The mine is scheduled to begin its operation in 2010, when the proposed rail line extension to Shigatse will be completed. In Shetongmon as with all the cases mentioned above, the railway makes it easier for large-scale extraction, and each deposit is either close to the railway or to its proposed extension routes.

In 2006, there existed a total of 7.9 million tons of proven copper reserves in the Qulongdong copper deposit in “TAR” and 4.37

million tons of copper reserves in the Pulang copper deposit in Yunnan Province. In the same year, large efforts were made in attracting foreign investors in mineral resource prospecting and mining, with a total of 249 prospecting permits and 194 mining permits granted to foreign investor-involved projects, such as the Shethongmon copper-gold deposit in Tibet.¹⁷

Gold mining is another major issue in Tibet. Modern gold mining technology that western companies are introducing in Tibet involve machine, chemical and water intensive processes in which hundreds of tons of rocks are moved and destroyed for every ounce of gold extracted. An estimated 200 tons of rock yield one ounce of gold, 80% of which is used for nonessential applications such as jewelry. Since cyanide is used as a processing agent by the gold mining industries, the downstream environmental risks cannot be neglected especially because mines of interest to western companies are all situated near rivers. One tablespoon of two percent cyanide solution is enough to kill a human being. Moreover, the nature of mining activity is such that it provides absolutely nothing to the local Tibetan communities other than few unskilled job opportunities, often in risky and toxic environments. And as larger areas of Tibet are mined, more communities will be forcefully displaced. One factor precipitating the further development of this lethal industry is the Gormo-Lhasa railway which provides the ideal transportation medium for mining companies. The transportation facilities provided by the railway is creating a rush among Chinese and western companies to exploit Tibet's minerals, threatening to cause large-scale environmental destruction reminiscent of the indiscriminate logging of Tibet's forests between the 1960-1990.¹⁸

Critics had long questioned China's claim that the development of Tibet was the sole reason behind the building of the 1,956-km Siling-Lhasa Railway. Meng Xiani, director of the China Geological Survey (CGS), has revealed that 16 large copper, lead, zinc, iron and, possibly, crude oil deposits exist along the railway line. These are expected to yield at least 18 million tons of copper, and 10 million tons

of lead and zinc. With this announcement, one of the secret reasons which motivated China to spend a colossal \$ 3.7 billion on the Tibet's railway, has now tumbled out. These deposits could reduce China's dependence on minerals from several countries.¹⁹



Extraction of salt in Tibet
Credit: Tibet Museum, DIIR

Beijing officially adopted a number of policies and laws on mineral resources that advocate “protection of natural resources”. Yet, despite all these adopted and amended laws on mineral resources, rampant destruction of Tibet's resources have been carried out in large scale with the help of foreign expertise.

Areas of the Tibetan Plateau bordering China are already highly industrialised, with little attention paid to pollution control. In the arid Tsaidam Basin of Tibet's far northeast region of Amdo, oil fields pump two million tons of crude oil annually. Aluminium smelters, asbestos and lead and zinc mining are expanding under the patronage of the Chinese Government. Tibetans are powerless to appeal for installation of pollution control equipment, because the factories are owned and run by the same people who are supposedly in charge of environmental protection.

A 1996 report from the US Embassy in Beijing on illegal gold mining in China, focussing particularly on Tibet's Amdo Province, further suggests connivance of local authorities with illegal miners in the rampant and uncontrolled gold mining on Amdo and Kham's fertile grasslands. The mining methods applied leave the grasslands devastated, while the use of short term and highly destructive technique makes future mining unprofitable. The region's nomads are powerless to prevent this ecologically devastating encroachment on their traditional grasslands.

The lack of power of the Tibetan people to shape mining policy is also evidenced by the case of the Tongren aluminium smelter, located in Rongwo Chu agricultural valley just north of Rebkong (Ch: Tongren) in Amdo. Due to complete lack of pollution control, toxic flouride-laden smoke pours from this smelter, contaminating grass, harming the local communities, and causing recurrent poor grain harvests.

Although mining is still considered in its primary stages of development in the region, each year Tibet produces tens of thousands of tons of Chromite, 1,500 tons of boron and 16,000 tons of szaibelyite. The Norbusa Chromite Mine in Chusum county of southern Tibet is largest of its kind in China. First developed in 1986, the mine involved a total investment of \$10.35 million. Its first phase produced 50,000 tons of Chromite a year; its second phase boasts an underground mining capacity of 100,000 to 120,000 tons annually.²⁰

China's 11th Five-Year Plan and the 2020 Project outline further exploitation of Tibet's resources and also envisage massive state investment in the transport and urban infrastructure needed to effectively access and convey those resources. In the late 1990s, in partnership with an Italian oil company ENI/Agip, a pipeline to Lanzhou was built, extracting Tibetan gas on a large scale. The pipeline is now interconnected with the gas pipeline that starts in Xinjiang to the north of Tibet, traverses Amdo, and then runs all the way to Shanghai. The prosperity of Shanghai depends directly on the extraction of gas in Tibet.²¹

The railway from Gormo to Lhasa plays a major role in facilitating further exploitation of minerals and oil from the remote parts of Tibet.

As the Chinese on the eastern seaboard extract profits from the natural resources of Tibet, they are also committed to the further discovery and exploitation of new energy deposits in Tibet. Chinese newspaper sources report that the Lhunpula Basin, located in central Tibet, may hold 150-200 million tons of oil. Chinese scientists pre-

dict that the site will become the major oil reserve base for this century. The discovery and verification by Chinese geologists of three major porphyry copper ore strips in Kham, accounting for one-third of China's total copper ore resource, has immense negative implications for the Tibetan Plateau, unless China improves its capacity to regulate and implement environmental policies.

The question, however, is will these natural resources help develop the Tibetan people or will this be another story of natural resources as a "curse". As Maimunah, the executive director of Mining Advocacy Network said "It's a myth that mining brings welfare to the people".²²

Dams and River Diversion

The Tibetan Plateau plays a crucial role in stability of global climate and has an important influence on the Indian monsoon, which in turn contributes 70 percent of India's total rainfall and is the life blood of Indian people. Tibet, due to its geographic location and geological formation is the principal watershed for Asia. Four of the Indian subcontinent's important rivers—the Yarlung Tsangpo (Brahmaputra), Sengey Khabab (Indus), Macha Khabab (Karnali) and Langchen Khabab (Sutlej)—originate in Tibet. Other important rivers flowing from Tibet include the Driчу (Yangtze), Zachu (Mekong), Machu (Huang He) or the Yellow River, Gyalmo Ngulchu (Salween) and Bumchu (Arun). Currently 90 percent of their runoff flows downstream to China, India, Bangladesh, Nepal, Bhutan, Pakistan, Thailand, Myanmar, Laos, Cambodia and Vietnam, watering most of Asia. In addition there are more than fifteen hundred lakes scattered all over Tibet. China calls Tibet its "Number One Water Tower". Its ability to capture, hold, and steadily release water for downstream users is due to the high mountains, the snow peaks and their glaciers, all of which are now melting more quickly due to global warming.

Much of the environmental damage on the Tibetan Plateau contributes directly to the destruction of Tibet's mighty rivers. These riv-

ers, feeding most of Asia, are now often choked with silt, flooded with excess water, or even dried up where they used to run strong. Indiscriminate deforestation in Tibet has resulted in severe flooding of rivers downstream in China, which ultimately forced Beijing in 1998 to impose an indefinite ban on logging around the sources of two major rivers: the Machu (Yellow) and Drichu (Yangtze). Only Tibet can ensure China's water supply. China's current environmental decisions are driven primarily by domestic economic compulsions rather than genuine global environmental concerns.

Most of the Chinese population are concentrated in the region through which several great rivers flow, including the Yellow River. More and more of the Yellow River's water is being pumped out for the increasing populations' multiplying needs, to resolve water crisis in an ancient lake and to supply water in Qingdao city of Shandong where olympic sailing event will take place.²³ The Yellow river has failed to reach the sea many times. In 1997, it failed to reach the sea for 226 days, and a leading Chinese water expert, Ma Jun, estimated that several cities near Beijing and Tianjin could run out of water in five or seven years.²⁴

South to North Water Diversion

By 2010, urban and industrial water users in Beijing and Tianjin are expected to use water taken from the Yangtze River brought to them by the colossal diversion lines. Overall, this diversion scheme involves three different routes and the construction of thousands of kilometres of canals and aqueducts. The three routes—eastern, central and western—will transport about half of the Yangtze River's fresh water to northern China. The western route of the south-north water diversion project has always been central to the whole project, as it proposes the most direct routing of Tibetan waters, right from the source, to the increasingly parched areas of northern China.²⁵

According to the Vice Director of Qinghai Province, already 67 percent of land area around the upper Yangtze River has become desert. 90 percent of swamps have dried out. Many lakes and streams have



Diversion of Yangtze via three routes
 Source: Tashi Tsering, Tibet Justice Centre

stopped flowing. The proposed western route runs through an earthquake prone area and 490 kilometres of tunnel will be constructed through this region. Once the project is completed, about 38 to 48 billion cubic meters of water will be transferred annually to areas with a population of 300 million.

Additionally, considerations are currently under way to pump water from the Brahmaputra River farther south into the Yellow river. This project, if sanctioned, could lead to the excavation of mountains for tunnels and could pose immeasurable challenges for both the environment and human kind. A large number of people will be displaced from their ancestral land to make way for the project.

Other rivers in Tibet are also being tapped. A cascade of no less than 14 dams has been designed on the most international river of Tibet, the Zachu (Langcang Jiang/Mekong), with some dams already completed and others under construction. Another 13 hydropower dams are planned on the Gyalmo Ngulchu (Nu Jiang/Salween) in Yunnan Province alone, with the largest being a 34 metre high dam at

Chalong in Nagchu Prefecture, adding to China's over 22,000 existing large dams.

Green Watershed, a Chinese environmental NGO, points out that China launched its massive dam building enterprise without consulting neighbouring countries or assessing downstream impacts. "On an international river, no country should be selfish," says Xu Xiaogang, a mainland academic and environmental activist. Robert Tyson of the Smithsonian Tropical Research Institute, USA, a leading fisheries expert warns that the Chinese hydropower dams, channelisation for navigation, and heavy commercial shipping will kill the river. The dam will be a menace to livelihoods, property and life in all of the downstream countries.²⁶ Therefore the protection of these headwaters has become very urgent.

The Xiaowan Dam's 4200 MW capacity, when completed in 2012 as an integral part of the infrastructure of the China's Western Development Programme, will allow Yunnan Province to sell hydropower to Thailand. While Thai industry might gain, other downstream nations are fearful of the consequences.

Desertification

Open grasslands—accounting for 70 percent of the landmass of Tibet—have sustained Tibetans, their pastoral herds, and the prolific wildlife mingling with them, over the millennia. The expert consensus on Tibet's grasslands is that they are degrading. This degradation is not only having serious consequences on the livelihood of Tibetan nomads, but it is also affecting the climatic patterns of China and the world. However, there seems to be official Chinese denial over the causes for rangeland degradation and the factors contributing to this new phenomenon.

In reality, China's misguided agricultural policies from the early 1960s are chiefly responsible for the present state of the grassland. The following policies over the years have contributed to degradation

of grassland on the Tibetan Plateau:

- conversion of grassland (the most fertile and lower altitude pastures) to cropland in the early 1950s
- privatisation of communal land, the traditional pastures of semi-nomads, under a new policy to allow commercial development
- cultivation of rapeseed on low-lying pastures—particularly by Chinese settlers and military units—around the pastoral plains of Tso Ngonpo (Lake Kokonor)
- uncontrolled gold mining and harvesting of wild medicinal herbs on grasslands with the connivance of local authorities
- infrastructure development such as highways, airports, railways and new townships for settlers
- elimination of indigenous predators leading to the loss of natural checks on the growth of pest population
- Sedentarisation: policy of fencing and permanent settlement. The settlement policy restricts the flexibility and mobility of the nomads leading to the concentration of herds in limited areas of pasture that quickly becomes overgrazed
- Mountain Closure: To facilitate the reforestation program restrictions were imposed upon Tibetans and their livestock by sealing off mountainous areas reducing the already marginal grazing land areas and further exacerbating the shortage of forage availability to the livestock.

However, China has abrogated responsibility for grassland degradation by citing natural causes such as global warming and the general drying up of the Tibetan Plateau and blaming the nomads for ‘irrational’ and ‘stupid practices’. Pikas, which are small mouselike mammals, are also being blamed, treated as ‘pests,’ and are poisoned over large areas. Nevertheless, the degradation of rangeland continues



Fenced grassland in Damshung

and severe around peri-urban areas, resource extraction locales, and areas of major development.

even in areas where few or no pikas are left. The extent and nature of grassland degradation is yet to be studied in depth, but the problem is pervasive. Degradation is particularly noticeable

Based on the findings of the United Nation Development Program (UNDP), the Asian Development Bank, the World Bank, the International Centre for Integrated Mountain Development and other organisations, it is clear that government development policies have been a major factor in the present plight of grasslands. Erosion and degradation of grasslands began under communism when the nomads and farmers were collectivised, with all power in the hands of communist cadres and their so-called “scientific” knowledge. In the production fervour of the 1960s and 1970s, Mao’s China felt compelled to force high yields from the Tibetan lands— especially in meat production— much higher than the seasonal grasses could bear. As herd sizes were doubled and quadrupled at the command of cadres, the degradation of grasslands began. It has continued to degrade since then. In 2001 the World Bank noted that the total area of degraded grassland increased by about 95 percent between 1989 and 1998, with a notable acceleration in the middle-to-late 1990s. It is hard to avoid the conclusion that the most fundamental underlying cause of grassland degradation has been poor government development policies.²⁷

Overall, China has about 4,000,000 sq km of grassland, accounting for 40% of its total area. Degradation of grassland in China continues at a dramatic rate of 6,700 sq km per year.²⁸ Desertification

costs China between \$ 2 and 3 billion annually, and an estimated 110 million people suffer directly from the effects of desertification.

Undermining Indigenous Livestock Management System

The role of traditional Tibetan community-based management of grassland has been seriously undermined. The American anthropologist, Melvyn Goldstein, and other international social scientists have written that the traditional livestock management system in Tibet was a time-tested model, sophisticated, and developed enough to ensure viable and sustainable management of marginal pastures.²⁹

While China has produced volumes of data on scientific studies of grassland and livestock, hardly any literature or studies have been produced on traditional nomadic risk management and uses of grassland. The undermining of traditional Tibetan livestock management methods is basically due to China's lack of experience in managing open grasslands. Wherever Chinese farmers were settled on "minority" grasslands, they ploughed the native grasses, planted grain and then found the pastures turn to desert—the topsoil blown away in dust storms that plague Beijing to this day.

Very few Chinese migrated to Tibet by choice; fewer knew anything about the ecological dynamics of upland grasses and their ability to endure intense cold and seasonal grazing by both wild and domestic animal herds.

With the economic reforms of the 1980s and China's opening to the outside world, came the inherent policy of 'squeeze agriculture for industry' and the shifting of social responsibility from Beijing to local governments, which further accelerated the ecological destruction in Tibet. There has been very little investment in the vast Tibetan grasslands, and China still does not acknowledge that its policies are the cause for grassland degradation. Instead, China blames the plateau's nomads, labelling them as 'backward', 'ignorant', and 'unaware' of the consequences of their actions. This equates to an official practice of blaming those who are most immediately and severely disadvantaged by the eroding landscape.

The Chinese ignorance of the dynamics of grassland ecosystems and the positive role of the nomads and farmers has resulted in misinformed and misguided policies which have harmed rather than helped in the restoration of grassland. Undermining the role of Tibet's nomads has resulted in a grassland crisis as real as the dilemma faced by tropical rainforests. The combined impacts of erosion, fencing, sedentarisation, debt, poverty, taxation, toxic weed invasions, soil loss, exclusion and absence of basic human services threaten the very survival of the Tibetan nomadic way of life.

Impact of Grassland Policies

In recent years, many nomads are being forcibly settled down by the new policies imposed upon them by the Chinese government. More than 52,000 Tibetan herders and farmers will move to permanent housing by the Chinese government in 2008.³⁰ Fragmenting land between each household, fencing the land and settling them aggravates nomads' lifestyle which used to rely entirely upon the rangeland for their livestock. The nomads' presence in the rangeland exoticise the region and creates the unique characteristic of the Tibetan Plateau.

In an attempt to transform the nomadic herders into commercial livestock rangers, the Chinese government neglects the fact that traditional pastoralism survived the nomads and sustained the rangeland with no case of overgrazing in the past.

A new system known as Household Responsibility System—“privatisation” of grasslands was introduced in the early 1990. Under this system, land contracts are granted to individual households on a term lease, while the ownership of the land remains with the State. Allocation of relatively small areas of grasslands to families forced them to sell their livestock to slaughterhouses in order to reduce the size of their animal herds. Nomads now have limited herds and the male herders who used to rear herds in the past could not find activities to involve themselves. As a result, many of them get caught up in leisure activities such as gambling etc.

Allocated land would remain unchanged, but the family member increases and the land has to divide further. This forces to limit the number of children in a family in some areas.³¹

Grassland redistribution creates social tension among the nomads because some nomads received pastures with access to water and some did not. Clashes between nomadic communities over grassland ownership has been reported by the Tibetan Centre for Human Rights and Democracy.³²

Once prosperous nomads may soon be forced—by escalating user-fee health costs and school charges, and by absolute poverty—to become beggars in towns and cities.

Mass Package Tourism

Tourism has become a “pillar industry” that attracts and employs huge numbers of immigrants to Tibet, swamping the Tibetan population. It brings with it hotels, discos, massage parlours, brothels, shopping malls and endless intrusive strangers. While rich businessmen build shopping centres in Lhasa, poor Chinese immigrants flock in, unable to find work elsewhere, assisted by special regulations which allow them to register their place of residence in Lhasa as long as they choose to stay.

Mass package tourism, as organised by Chinese authorities in Tibet, is no doubt taking a severe toll on the plateau. The environmental externalities caused by the current tourism industry have actually reduced the natural beauty of the areas that are intrinsic to the industry itself. In 2006, some 2.45 million tourists visited “TAR”, which was 36.1 percent increase over the previous year. To accommodate this explosive growth, the authorities expanded the local tourism industry even further and received 4 million tourists in 2007, aided by cheap rail and airfares.³³ Such a drastic increase in tourism will surely overwhelm this destination, which is considered to be a place of spiritual, mental purification and transformation to the Tibetans.

Like in other sectors, the most distressing aspects of the rapidly developing tourism industry is the exclusion of the local population. Tibetans, who already face marginalisation under the Chinese rule, face numerous barriers to participating in the tourism sector.

Sustainable tourism, such as ecotourism and pro-poor tourism (tourism that generates net benefits for the poor) should be the priorities of the tourism industry. Developing a holistic tourism strategy that improves the overall quality of life in Tibet, and encourages local involvement in decision-making, is the linchpin to achieving sustainable tourism in Tibet.

Development for Whom?

In the last fifty years, China claims that it has ‘developed’ Tibet and improved the living standards of Tibetans. China claims that the “Tibet Autonomous Region” today enjoys extraordinary economic growth averaging over 10 percent during the past five years. In 2001, the “TAR” showed the highest growth rate in all of China at 12.8 percent.

Beijing pours huge subsidies and funds into Tibet, especially in the “TAR”, amounting to more than 90 percent of the region’s total revenue, thereby making Tibetans inefficiently dependent on government sources of finance from Beijing. Such finance continues to be targeted at urban areas where Tibetans have the hardest time competing with Chinese migrants.³⁴

Despite massive inputs, poverty and deprivation prevail among the majority of the Tibetan population. The demonstrable current levels of deprivation and social exclusion raise serious questions about the end uses and effectiveness of massive central subsidies.

Available statistics on Tibet indicate that Tibetans now lead impoverished lives. Based on UNDP’s China Human Development Reports in 1997, 1999, 2002 and 2005, the “Tibet Autonomous Region” continues to remain at the bottom when ranked on the Human Development Index, a composite of health, education and in-

come indicators. The World Bank also puts “TAR” at the very bottom, in its 2003 report, *East Asia Integrates*.

According to the above reports, performance in the health and education sectors is very dismal in the Tibetan region. According to the UNDP’s National Human Development Report 2005, education in the “TAR” is the worst among all of the 31 Chinese provinces. It estimates that 55 percent of the Tibetan population are illiterate, while the other 30 provinces have illiteracy rates below 20 per cent.³⁵

Based on China’s statistical yearbooks for “TAR”, it is evident that the so-called economic growth and rise in income in Tibet has been largely an urban affair. More than 80 percent of the Tibetan population in “TAR” reside in rural areas and engage in farming and pastoral activities. A careful study of rural incomes today reveals no real growth in the incomes of rural Tibetans. A study by Andrew Fischer reveals:

The actual purchasing power of rural incomes in Tibet did not change between 1990 and 2000. Rather, the real value of rural incomes decreased sharply in the first years of the 1990s, and then slowly returned to its 1990 real value by the year 2000. On top of all this, Tibetans had the lowest of all rural incomes in China by 1998.³⁶

In contrast to other provinces in China, the economy in the Tibetan region is characterized by the state dominated service sector that is largely non-productive, and is propped up by state subsidies and support. Secondary and tertiary sectors took off rapidly after 1994, the year when the Third Work Forum on Tibet was held and 62 projects were announced. Similar trends were observed after 2001 when the Fourth Work Forum and 11th Five-Year Plan announced another 117 and 180 projects respectively to develop “TAR”. State subsidies have a major role in the abnormal growth and share of non-productive economic activities since most of the government funds are channelled into administrative infrastructure and construction projects.

For most rural inhabitants in Tibet, the economy has literally stagnated in the midst of very rapid growth in select industries, notably urban construction and services. The primary commodity sector, where the Tibetans dominate, has been clearly neglected and has not benefited from the rapid economic growth that has occurred in a few enclaves of Tibet. The state has failed to invest in rural productivity, or to ensure that rural Tibetans have effective access to credit. Rural Tibet has few linkages to the modern subsidised urban economy. If this is development, it is a distorted and selective form of development that excludes the many (rural Tibetans) and benefits the privileged few (Chinese settled in urban areas of Tibet). A real opportunity for redressing the urban/rural divide is to promote the processing of raw, rural commodities, especially in the production of wool and dairy products. Yogurt, cheese and wool are in much demand among urban consumers in China's major cities. Tibetan carpets, handicrafts, traditional medicines and other traditional Tibetan manufactured goods—apart from having considerable demand worldwide—have great potential for redressing current inequalities since they are largely rural-based. But all these now seem inapplicable since the new regulations of permanent settlement of nomads are being imposed on Tibetan herders and farmers, many of whom are deprived of their traditional livelihood.

Looking to the Future

The biggest flaw of China's policies in Tibet is the assumption that natural and social differences are an impediment to progress, rather than being a sign that different paths and end-points to development exist. Differences in material standards between China's eastern and western regions determines the standards for development in terms of levels of economic output and consumption. The moral imperative for Tibetans is not perceived as finding their own way in their own time, but as Tibetans catching up rapidly with the Mainland's materially prosperous eastern and coastal provinces.

China's development model and logic, a 'lowland model' based on Chinese experiences and conditions, assumes the presence of common processes and features throughout the People's Republic of China. Implicitly, this model ignores the possibility that differences in Tibet's social and natural conditions can be of developmental value, and adaptive and basic diversity can be seen as a positive feature for growth.

The above logic is driving development and environment policies now being imposed from afar on Tibet, be it the settling of nomads, fencing of grassland, reforestation, extermination of pests, infrastructure development, urbanisation or the approach towards sustainable development. The Tibetan people urge China to understand, and hopefully appreciate, the diversity and non-uniformity of Tibet's unique case, to build on the strengths of local conditions, and to show a new willingness to listen and learn from both domestic and global experiences.

It would be wise to remember an ancient Chinese proverb that advises: 'To know the road ahead, ask those coming back.' By drawing on the lessons of its own experiences as well as parallel international experiences, China can learn and avoid debacles associated with large scale economic development, especially in fragile environments.

Today's China is overly focussed on catching up to western levels of consumption, with environmental concerns seen as secondary. It has failed to recognise the wisdom in Tibet's traditional knowledge of sustainability. Buddhist philosophy considers not only self, and not only this life, but also the welfare of all sentient beings—including generations yet to be born.

Our Appeal

China is inviting the world's environmental NGOs and development agencies, big and small, to join it in implementing its projects in Tibet. Already many international organizations have taken up this invitation. We Tibetans also encourage active outside engagement,

seeing the expertise as an opportunity to improve China's standards and help China catch up with the world's best practices by introducing experience gained elsewhere in the world. China can learn to include rather than exclude civil society from decisions on how best to use natural resources such as the forests and the grasslands, and to include Tibetans as active stakeholders with the right to participate. We only welcome international involvement to empower Tibetan communities and to articulate their aspirations skilfully.

While we welcome partnerships with Chinese authorities that introduce constructive projects in Tibet, we are nonetheless concerned—for the sake of both the Tibetan land and its populace (with its implications for the rest of the world)—that projects are undertaken thoughtfully and skilfully. The Tibetan preference will always be for small-scale local projects that directly meet basic human needs, empowering and enabling local communities to own and maintain environmental improvement projects. Large-scale projects, especially heavy infrastructure and industry, are not suitable for development investments on the Tibetan Plateau due to its fragile ecology.

It is obvious that the rural Tibetan population—the nomads and farmers—should be made the centre of economic and environmental planning. Putting farmers and herdsmen first is not new in the thinking of the global development circles. The rhetoric of participation is common. A standard should be established that ensures the employment of competent Tibetans in all phases of any project cycle. If Tibetans are part of a project team, they will be able to not only discern the actual needs and true feelings of local populations in Tibetan regions, but also to help resolve any obstacles in dealing with the Chinese bureaucracy. This would contribute to promoting good governance, the rule of law, transparency, and accountability. Tibetan staff or consultants will not add greater complexity to projects, but will help find solutions, and workable ways of satisfying the requirements of all parties.

Tibetans prefer projects that are local, specifically targeted, emphasise flexible decentralised service delivery, give preference to human services rather than large scale infrastructure projects, and are small rather than unwieldy.

Conclusion

Wildlife in Tibet especially the most endangered species are on the verge of extinction. Trophy hunting and hunting wildlife for use of their body parts in the traditional Chinese medicines are practiced widely with a connivance of the local authorities.

Foreign investment and technical expertise are increasingly persuaded by Beijing into the exploitation of mineral resources in Tibet. Mining in Tibet will have serious implications for downstream water users since much of Tibets minerals can be found near river valleys.

Today, there is expert consensus on Tibet's degrading grassland. China's policies on Tibet's grassland since the early 1960s are mainly responsible for the present plight of the grassland. Settlement of nomads further exacerbates the condition of the rangeland.

Experts predict that water shortage will create tensions in the world in the coming years. About 50 percent of the total world population depend on Tibetan rivers. Today, these rivers are threatened by tapping their water and diverting them to north to fulfill the needs of the Chinese people alone.

Connection of the heart of Tibet with the mainland China by the railway has been termed as "second invasion" of Tibet. One of the most serious social impacts of the railway is the influx of Chinese migrants.

There is no doubt that the practice of mass package tourism in Tibet is taking a severe toll on the plateau. Tibet's environment and culture are threatened as millions of tourists visit the plateau every year.

Despite massive inputs, poverty and deprivation prevail among the Tibetan population.

The current development pattern in Tibet should integrate the traditional ways of development. The traditional ways of life and knowledge of the Tibetan people must be respected, supported, and integrated into sustainable development plans for Tibet. The Tibetan Buddhist ethics respecting the interconnectedness of life which conserved Tibet's sensitive ecology for over a thousand years must return to the center of development and environmental policy in Tibet.

Tibet must no longer be a place where China exploits the natural wealth and animals until deterioration or annihilation, transfers populations of displaced Chinese settlers, extracts wealth and profits for Chinese, and dominates the Tibetan people. Instead, development projects in Tibet must empower Tibetan people to articulate their own development aspirations and allow them stewardship over the fragile ecology of Tibet. These projects should focus on small-scale appropriate development which addresses the basic needs of Tibetans, especially farmers and nomads in rural areas. These projects should center on the Tibetan cultural worldview as the basis of development. The Central Tibetan Administration has issued Guidelines for International Development Projects and Sustainable Development in Tibet,³⁷ which are addressed to all parties who wish to undertake projects in Tibet. These guidelines provide clear principles and practices for human developments that are best suited to Tibet and its people.

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