

Foreword

I believe that the environment and the critical need for environmental protection are two areas where the views of Beijing and the Central Tibetan Administration genuinely converge and could serve as a solid basis for greater collaborative work in other vital areas.

The various campaigns by the Tibet Support Groups have generated a worldwide concern for the endangered environment of Tibet which led to a series of detailed reports enabling a deeper understanding of the serious, perhaps irreversible impacts of mistaken policies implemented in Tibet. In 1992 and again in 2000, we published book length reports covering the full spectrum of loss and degradation of the Tibetan environment. Those two reports, *Tibet: Environment and Development Issues 1992* and *Tibet 2000: Environment and Development Issues* are available on request at ecodesk@gov.tibet.net. Eventually, on 10 March 2003 the Information Office of the State Council of the People's Republic of China issued a white paper on the state of the environment in Tibet called *White Paper on Ecological Improvement and Environmental Protection in Tibet*.

In recent years to realise the aims of China's Western Development Program, Beijing has been pouring money into building infrastructure in the minority-inhabited regions to exploit regional resources and to tie these regions politically with China. While commending China on an orderly leadership transition, the Central Tibetan Administration is especially appreciative of the concerns expressed by some members of the new Chinese leadership on the urgent tasks of environmental protection. These leaders have expressed their concerns not only on the feasibility of the largescale Western Development Program but also on its negative impact on the environment. Some of these leaders have also expressed their serious concerns about the grandiose "south-north water transfer" which will carry water from the minority-inhabited south-western regions, where water is comparatively abundant, to the parched north which is taken over by desertification and drought.

China's latest white paper on the Tibetan environment is a justification for all the big development projects that China hopes to undertake in Tibet, especially the railway line linking Lhasa with China. We call upon the new Chinese leaders to reconsider these big projects and replace them with small-scale development projects that materially benefit the Tibetan people and which do not undermine the integrity of Tibet's eco-system. Mammoth development projects geared towards exploitation of Tibet's natural resources will in the long-run prove disastrous for Tibetans, China and all the neighbouring countries that depend on the life-sustaining river waters of the Tibetan Plateau. The disastrous 1998 Yangtze floods, caused by rampant deforestation in Tibet, are a clear lesson that Beijing cannot implement narrow-minded policies in Tibet without suffering catastrophic environmental consequences.

The eco-system of Tibet is not only important for the inhabitants of Tibet but it has an effect on the environment of the whole of Asia due to Tibet being the source of the larger rivers and also because the Tibetan Plateau controls the monsoon patterns, as clearly established by scientists. The immediate effects of this are felt in India, China, Burma, Bangladesh, Pakistan and other countries downstream.

This Report crafts a positive roadmap that urges China to a more enlightened thinking for the welfare of the future generations of Tibetans and peoples of the neighbouring countries who benefit by the resources of the eco-system of the world's largest plateau.

Environmental issues deserve to be considered in their own right, on their merit as part of the heritage of the world. Whether Tibet's political issue is resolved or not, the environmental issue cannot be neglected as it is directly related to the welfare of the peoples of India, China and those of other downstream countries. For this reason, His Holiness the Dalai Lama suggested in his 1987 Five-Point Peace Plan to make the Tibetan Plateau into a zone of non-violence and a sanctuary for environmental conservation.

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Summary

The Information Office of the People's Republic of China's State Council released its *White Paper on Ecological Improvement and Environmental Protection in Tibet* (<http://english.peopledaily.com.cn/whitepaper/tbpaper/tb1.html>) on 10 March 2003 - the 44th anniversary of Tibet's National Uprising Day when Tibetans rose against China's occupation.

In the light of China's new policies of transparency and stressing environmental protection, China's latest white paper might be expected to be an objective and factual report on the state of Tibet's environment. But this white paper is another transparent exercise in propaganda on occupied Tibet. It is evasive over the causes of current environmental crises and the implementation of Beijing's environmental policies.

China's white paper opens with the claim: "For over a half a century, ecological improvement and environmental protection in Tibet has been an important part of the effort to modernize Tibet." In the West, the 1960s saw the rise of environmental awareness. In China, official environmental policy - and positive laws for the protection of the environment - took off only in the post-reform period, following the death of Mao Zedong.

China's first environmental legislation, the Environmental Protection Law, was introduced in 1979. For Tibet, the disastrous flood of 1998 along China's Yangtze River was the turning point that really brought the need for environmental protection in Tibet to Beijing's attention.

The white paper starts with the standard communist rhetoric on pre-1950 Tibet as having exercised "feudal serfdom" with its "extremely low level of productive forces"; a "state of passive adaptation to natural conditions"; and the impossibility to "discuss the objective law of the ecological environment of Tibet". Beijing cites this allegedly "backward system" as the reason for one-way exploitation of resources and the neglect of the environment in pre-1950 Tibet. Yet, the same report goes on to contradict itself and concludes that the general condition of Tibet's environment today is superior in comparison to China and the rest of the world, because most of the ecosystem remains in its "primordial state". Further, China raises fears that the exile Tibetan community and His Holiness the Dalai Lama want to halt social progress and take Tibet back to "feudal serfdom".

In the concluding section, China's white paper says: "The Dalai Clique and the international anti-China forces shut their eyes to the progress in the ecological improvement and environmental protection work in Tibet... they want really nothing to hamper the social progress and modernization of Tibet and to prepare public opinion for their political aim of restoring the backward feudal serfdom in Tibet and splitting the Chinese nation."

The above fears projected by Beijing are baseless and are used to justify the occupation of Tibet. First, there is no intention on the part of exile Tibetans to "deface" the image of China or to halt social progress in Tibet. Secondly, Tibetans are neither anti-development nor anti-China.

In a little over four decades of surviving in exile, Tibetans - under the guidance of His Holiness the Dalai Lama - have embraced democracy totally and have achieved remarkable progress in education compared to the current condition of education in Tibet. Tibetans in exile enjoy universal adult suffrage and have been electing their representatives directly to the Assembly of Tibetan Peoples' Deputies (the exile parliament in Dharamsala) since 1960. In July 2001, in a move towards complete democratisation of the exile community, Tibetans exercised their universal suffrage to elect a Kalon Tripa (Head of the Cabinet) directly for the first time.

These democratic developments are a clear indication that Tibetans in exile and His Holiness the Dalai Lama have no intention whatsoever of reverting to "feudal serfdom" - as China portrays pre-1950 Tibet - and rejecting democracy. We anticipate that Tibetans on the plateau will also be sharing and exercising such rights in the near future.

The Central Tibetan Administration interprets China's white paper on the environment as a sign that the Chinese government is rightly concerned about current ecological and development dilemmas in Tibet. Any initiatives towards improving the quality of the environment and the lives of Tibet's populace are most welcome and much-needed. We profoundly understand that China now faces an uphill task and problematic challenge to repair and protect Tibet's environment whilst introducing sustainable development.

In this respect, both the PRC and the Central Tibetan Administration share the same goals. However, we do have strong reservations over the wisdom and implementation of China's present development policies on the plateau. Major projects relating to dam building and hydropower generation, land reclamation, settling nomads and fencing of grasslands, afforestation, conversion of farmland to grassland and forest, all sound impressive on paper. But experts question whether these policies are well thought through, appropriate and can be beneficial to both China and Tibet longterm. We question:

- Why is there a huge gap between China's environmental policy and its implementation?
- What are the likely social and environmental impacts of large-scale infrastructure projects that are being implemented as part of the PRC's current Tenth Five-Year Plan and the Western Development Program?

No proper social and environmental impact assessments and studies have been published in the case of mammoth projects like the US\$ 3.2 billion railway from Gormo to Lhasa, the west-to-east power transfer, west-east gas transfer and south-north water diversion. These infrastructure projects purely to serve China's own development needs raise serious concerns over the PRC's genuine commitment and willingness to improve and protect the environment and implement sustainable development in Tibet.

TIBET 2003: State of the Environment is compiled as an objective analysis of China's latest policies on the environment and development of the Tibetan Plateau. In this report, any reference to Tibet includes all of the 150 counties designated as Tibetan by Beijing and falling within the so-called "Tibet Autonomous Region", Amdo (Ch. Qinghai) and the Tibetan areas now incorporated by China into Sichuan, Gansu and Yunnan provinces.

China should view this report as offering alternative perspectives addressing environment and development issues across the plateau. The report also draws attention to the latest evidence - from diverse sources - of unsustainable exploitation of Tibet's environmental heritage, especially its water resources, sacred lands, agricultural soil and mineral resources, while population densities escalate beyond the carrying capacity of the fragile plateau. Beijing's policy of population transfer to the plateau is made viable only through unsustainable external inputs, including billions of yuan in direct subsidies each year, and the subsidised transportation of consumer goods manufactured in the Mainland.

This colonialist policy has created two distinct economies in Tibet today. One is centred on the urban and resource extraction enclaves that are heavily subsidised, capital intensive, and dominated by a non-Tibetan populace. The other is based upon the predominantly ethnic Tibetan rural economy which is starved of capital and State support, still subsistence-based in the 21st century, and deprived of the social services concentrated in urban areas.

Desertification: Grassland Politics

Open grasslands - accounting for more than 60 percent of the landmass of Tibet - have sustained Tibetans, their pastoral herds, and the prolific wildlife mingling with them, over the millennia. Today there is expert consensus that Tibet's grasslands are degrading and that this is having serious consequences on the livelihood of Tibetan nomads as well as affecting climate patterns for China and the world. However, there seems to be official denial over the causes for rangeland degradation and the factors that are contributing to this new phenomenon.

The following factors that have impacted on massive grassland degradation are avoided in China's white paper:

- Conversion of grassland (the most fertile and lower altitude pastures) to cropland in the Great Leap Forward of the early '50s and since then abandoned
- Reclamation of communal land, the traditional pastures of semi-nomads, under a new policy to allow commercial development
- Growing rapeseed on low-lying pastures - particularly by Chinese settlers and military units - around the pastoral plains of Amdo's Tso Ngonpo (Lake Kokonor)
- Uncontrolled gold mining and illegal harvesting of wild medicinal herbs on grasslands with the connivance of local authorities
- Infrastructure development such as highways, new townships for settlers and railroad tracks
- Elimination of indigenous predators leading to the loss of natural checks on the population growth of pest species

There is a tendency for the PRC to abrogate responsibility for grassland degradation by citing natural factors such as global warming and the general drying up of the Tibetan Plateau - and blaming the nomads for "irrational" and "stupid practices". The extent and nature of grassland degradation is yet to be studied in depth, but the problem is - pervasive and particularly localised and severe around peri-urban areas, resource extraction locales and areas of major development.

Pasture Degradation: Observations of International Agencies

Based on the findings of UNDP, ADB, the World Bank, the International Centre for Integrated Mountain Development (ICIMOD) and other studies, it is clear that government development policies have been a major factor in the present plight of Tibet's grasslands.

Erosion and degradation of grasslands began under communism when nomads and farmers were collectivised, with all power in the hands of 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 Tibetan lands, especially in meat production, which the seasonal grasses could not bear.

As herd sizes doubled and quadrupled at the command of cadres the silent cancer of degradation began. In 2001 the World Bank noted: "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 has been poor government development policies." (*China: Air, Land and Water*)

UNDP's *China Human Development Report 2002* states:

"Desertification costs China about US\$2 to 3 billion annually. An estimated 110 million people suffer first-hand from the impacts of desertification and, by official reports, another 2,500 sq km turn to desert each year. Ultimately, people's livelihoods in pastoral regions are at stake. The capacity of the grasslands to support animal and human population is indisputably decreasing... Development has occurred with a disquieting widespread degradation of land resources. This already strained people-land relationship has been further intensified and alarmingly worsened with widespread grassland destruction and desertification, deforestation, soil erosion, salinisation, land pollution and biodiversity loss...

"Recent decades have witnessed an increased rate of desertification. Between the 1950s and 1970s about 1,500 sq km of land each year have become desertified. In the 1980s the rate has increased to more than 2,000 sq km annually, and now China loses alarmingly 2,500 sq km of land to desert each year.

Desertification often occurs where agriculture and husbandry meet, partly the consequence of policies which for years favoured agriculture over husbandry."

China, the UNDP says, is now "one of the most seriously eroded countries in the world. Nearly two fifths of the total land area suffers from various degrees of soil erosion, and more than two thirds of its grassland."

Beijing's Undermining of the Traditional 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 was a time-tested model, sophisticated, and developed enough to ensure viable and sustainable management of marginal pastures.

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 respect for traditional Tibetan livestock management methods is basically due to China's inexperience in managing open grasslands. Wherever Chinese farmers were settled on "minority" grasslands - as in Inner Mongolia - they ploughed the native grasses, planted grain and then watched the pastures turn to desert, the topsoil blown away in dust storms that plague Beijing to this day.

Few Chinese migrated to Tibet by choice. Fewer knew anything about the ecological dynamics of Tibet and their ability to endure intense cold and seasonal grazing by wild and domestic herds.

With the economic reforms of the 1980s and the PRC's opening to the outside world, the inherent policy of "squeeze agriculture for industry", and the shifting of social responsibility from Beijing to local governments, there has been very little investment in the vast Tibetan grasslands. But China does not acknowledge that its policies are the cause for grassland degradation. Instead, Beijing blames the plateau's nomads themselves, labelling them "backward", "ignorant", and unaware of the consequences of their actions. There is an inverted official policy of blaming those who are most immediately and severely disadvantaged by the eroding landscape.

Policies based on ignorance of the dynamics of grassland ecosystems, and the positive role of nomads and farmers, have resulted in misinformed and misguided policies which have harmed rather than helped the animal husbandry.

Urbanisation and Destruction of Grasslands

The historic pattern of a dispersed population utilising the land extensively, as transhumant pastoralists, suited the nature of an intensely cold plateau where vegetation may never regenerate once it is destroyed. The modern pattern of concentrating unprecedented immigrant populations in cities and towns imposes huge and unsustainable demands on the surrounding areas. Not only is the natural capital exploited intensively, the wastes generated by towns and cities are returned to nature almost totally untreated.

China's longterm policies for Tibet strongly emphasise the importance of urbanisation, and the transport corridors connecting urban centres. However, there has been little investment in mitigating the impacts of urbanisation.

The UNDP's *China Human Development Report 2002* shows that the total length of sewer pipes in the "Tibet Autonomous Region" and Amdo is 0.3 percent of China's sewers and the total amount of human wastes carried away from urban centres is similarly minimal at 0.35 percent of China's total. If sewerage investment was proportionate to population size, these figures should be more than double.

It is one thing to remove wastes from towns, another to treat them properly before they discharge into rivers. The same UNDP report shows that by 1999 the discharge of industrial wastewater by urban factories in "Tibet Autonomous Region" and Amdo reached 64.9 million tons, of which only 28.7 million tons were treated in conformity with China's legal standards. The resultant water pollution compromises water quality in rivers that flow down throughout South and Southeast Asia as well as Mainland China.

China's 2003 white paper on Tibet's environment states that the two major factories in Lhasa - manufacturing beer and footwear - now comply with waste discharge regulations. Both factories were built in the 1990s and their tardy compliance has impacted negatively on the Kyichu, a tributary of the Yarlung Tsangpo, which becomes the primary river of Bangladesh further downstream, the Brahmaputra. The white paper admits that the brewery "used to be a major polluter" and that the footwear factory's water treatment facilities were paid for and installed by German government aid.

In Central Tibet only Lhasa has any garbage disposal plant. Major urban centres, including Shigatse, Tsethang, Chamdo, Nagchu and Gyantse, have no method of handling garbage disposal.

Modern cities require huge amounts of energy. Lhasa, a city that in 50 years of Chinese stewardship has increased its population 15-fold, now harvests its electricity from geothermal sources to the north and from hydropower to the south, from the most sacred of Tibetan lakes, Yamdrok Tso. Tibetans are outraged that their sacred lake has been tunnelled and piped, fitted with turbines and power pylons, and that the waters of this enclosed, high-perched lake are now exchanged daily with the waters of the Yarlung Tsangpo below.

The plateau's inadequate electricity supply will mean the installation of more large-scale hydro dams. Until they are built there will be ongoing reliance on coal, trucked from Tibetan coalmines far from Lhasa. The UNDP's *China Human Development Report 2002* finds: "People in Tibet suffer the highest level of indoor air pollution due to the high coal consumption per household."

Untreated waste and uncollected garbage are problems not only in urban areas. Even the sacred pilgrimage area of Gang Rinpoche (Mt. Kailash) in the far west of Tibet experiences uncontrolled littering by tourists, with no effort by local authorities to provide for the collection of pilgrims' discards.

A major 2002 report on development plans for Western China, *The 2020 Project: Policy Support in the People's Republic of China*, (here on referred to as *The 2020 Project*) co-authored by China's State Development Planning Commission and the Asian Development Bank, states:

"Degradation of the natural resources of the Western Region has been severe, particularly in recent decades. It has occurred largely as a result of increased population pressure for agricultural and urban development, involving logging, livestock grazing, and clearing, followed by cropping in areas with steep slopes, erosion-prone soils, or low rainfall, beyond the sustainable capacity of the land... There are population concentrations in the Yarlung Tsangpo middle reaches, and population growth, overgrazing, strong winds, firewood collection and the sandy soil are threatening livelihoods."

The livelihoods most threatened as stated by *The 2020 Project* are those of Tibetan farmers, since the Yarlung Tsangpo midsection is the grain bowl of south Central Tibet. This region will now be required to yield at high intensity to feed the burgeoning immigrant population in fast-expanding towns and cities - from Shigatse to Tsethang - along a 300-km stretch of Central Tibet's riverine artery. The sudden intensification of grain production relies on heavy applications of chemical fertilisers and pesticides to achieve yields, which in turn leads to chemical pollution of the Yarlung Tsangpo.

China's 2003 white paper admits to the presence of persistent organochlorine compounds in this fertile region, saying only that the problem is now being monitored and surveyed without outlining any remedial measures. Contrary to expert evidence from Chinese sources, the white paper says of Tibet that "most of its major rivers and lakes are in a primordial state".

Dubious Policies

China's official response to the crisis over grassland sustainability has five aspects. Firstly, around 1980 China reversed the communisation of nomads and distributed land and animals to each family, returning total responsibility to them. But this reversal also brought in a new policy of settling nomads, requiring them to exchange their tents for housing on land leased to them by the authorities, and to fence their land - often forcing them into debt.

This enclosure policy has concentrated herds into more limited areas of pasture which quickly become overgrazed, while restricting the nomads' customary flexibility and mobility. However, the lessons of degradation have not been learned and decision-making over the nomadic lifestyle is still in Chinese hands. This is apparent in the March white paper which boasts: "To enhance grassland amelioration in the pastoral areas, change the nomadic way of production, speed up development in pastoral areas and improve herdsmen's living standards, projects to construct grassland in the pastoral areas, build permanent settlements for roving herdsmen have been launched since 2001."

Tibet's pastureland is characterised by a short growing season, marginal terrain and a fragile ecosystem necessitating the nomads to move herds seasonally between varying altitudes. The UNDP's *China Human Development Report 2002* identifies the environmental harm done by sedentarisation of nomads. Sedentarisation "has been a government policy aimed at improving the living standards of nomadic herders. Over the short term, stationary herders also tend to have more livestock - a display of affluence. Mobile herding, on the other hand, though appearing harsh on herders' lives can give grasslands time to rejuvenate. The damage to the grasslands due to settled herding has been evident in

Inner Mongolia and other Central Asian regions."

Secondly, the allocation of land has remained unchanged for over two decades, despite the natural expansion of nomad families. In a 1999 interview, Peng Liming of the Qinghai Animal Husbandry Bureau, in charge of the nomads of northern Tibet, admitted that the curb on land is intentional, and its purpose is to teach the nomads discipline, which is the beginning of "civilisation". This senior Beijing cadre explained that when Tibetan nomad children become adult, marry and form families of their own, if their land cannot support them they will necessarily migrate to Chinese cities to seek factory work - or curb the number of children they have. This policy, he said, will continue unchanged for at least 50 years.

Thirdly, China has launched a vigorous chemical poisoning campaign to eradicate one of the keystone species that in reality sustains healthy pasture. The authorities hold the mistaken belief that the plateau pika or *ochotona* is the cause of degradation. A huge area of over 208,000 sq km - bigger than Ireland, Switzerland, the Netherlands and Belgium combined - was poisoned. However, international scientific research on Tibet has shown that far from being the causes of degradation, Pika aerate the soil by burrowing and as preys for hunting species. They are what scientists term ? keystone species?. However, the authorities remain unable to admit their mistake or distinguish cause from effect.

Fourth, Tibet's nomads remain poor, barely subsisting under the financial load of localised taxes and extra budgetary charges imposed by administrators who - since their salaries are no longer paid by Beijing - impose rents and invent new sources of revenue to achieve an income. This method of raising revenue includes the purchase of nomadic products at unrealistic prices.

Even though Beijing decries such arbitrary levies they persist in a *laissez faire* administration which leaves plenty of room for exploitation by local leaders. Additionally, China fails to invest in the rehabilitation of degraded rangelands, except in a few areas where, according to the China Council for International Cooperation on Environment and Development, the nomads have been forced to take bank loans and go deeper into debt to pay for outside Chinese contractors to plough and sow grass seeds.

Fifth, China's current policy of promoting grassland and forest regrowth is only achieved by banning nomads from these areas. On hillslopes China refers to this policy as "mountain closure". In January 2003 China's top central planner, Zeng Peiyan, announced that human use will be barred from 67 m ha of Tibet's grassland over the coming five years. This exclusion of indigenous pastoralists, with their intimate local knowledge and husbandry of the grasslands, only drives Tibetans into destitution and alienation. This punitive policy fails to utilise the native populace's wisdom and intense desire to sustainably maintain the grasslands and their wildlife.

Under the guise of ecological rehabilitation the Tibetans are in reality being further marginalised and excluded in their own land. China's white paper boasts of this policy of enclosure, "sealing off mountainous areas to facilitate afforestation... in line with the principle of limiting the number of grazing animals by the size of the pasture, rotation grazing periods, rotation grazing areas and ?no-grazing areas? have been designated." The State making decisions without the involvement of the primary stakeholder is quite contrary to global practice - known by development agencies as New Rangeland Management - which respects and supports pastoralists' mobility and traditional wisdom. The UN Food and Agriculture Organisation has identified the role Tibetan pastoralist community organisations could play in preventing degradation, managing risks and ensuring sustainability (<http://www.fao.org/sd/2001/IN0601a/en.html>). However, China's colonial management style remains topdown.

The 2020 Project report clearly recommends that the voices of nomads be heard as stakeholders who should be included in decision-making. It advises:

"Grassland management through administrative measures to enforce carrying capacities has either not worked well or been expensive. Necessary measures include the following: Reviewing the Grassland Law of 1985 with a view to strengthening the role of herdsman and village committees in grassland management and reducing the role of government... Possible further measures include the following: Clarifying and certifying the ownership and usufruct of grassland, and handing out certificates for the use and ownership of grassland. Allowing peasants and herdsman to buy shares by giving them land ownership and usufruct."

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 the absence of basic human services threatens the very survival of the nomadic way of life.

Once prosperous nomads may soon be forced - by escalating user-pays health costs and school charges, and by absolute poverty - to become beggars in Chinese-run towns and cities. Or factory workers if anyone will employ them.

Local Empowerment: The Only Viable Solution

Pastoral-friendly policies are urgently needed to facilitate slow, sustainable progress so that nomads have the choice and freedom to decide their way of life in future. Since animal husbandry is subsistence-based - and the environment nomads operate and depend on is marginal, with limited potential for intensification - it is essential that State policies do not impose interventions that bypass local conditions and the traditional wisdom of nomads. We recommend that the PRC planners:

- Reverse the present policy of settling nomads and fencing grasslands, and instead promote livestock mobility - fundamental to preventing environmental degradation. This movement of livestock is the basis of traditional pasture management
- Promote economic diversification and improve social development programs. And off-farm employment opportunities that take natural and comparative advantage of pastoral so the nomads remaining on the grassland can develop a viable livelihood
- Reduce risk to nomadic households by legitimising communal tenure and management of pasture resources so that all will have equitable access to resources
- Promote and develop community-based management of resources through collaborative management of pasture, with local communities in partnership with government extension, research and administration entities

By building on the strengths of rural communities, China can achieve the goal of improving the livelihoods of nomads and restoring the quality of their grasslands. This calls for a new way of thinking, a new approach that respects and utilises the diversity of expert knowledge - from nomads to scientists and policy-makers. This approach is alien to PRC thinking and will only be accepted by Beijing's central planners when there is openness to more democratic mechanisms for research, development planning and implementation.

Biodiversity Conservation: Policies Versus Implementation

Beijing's March 2003 white paper on Tibet's ecology and environmental protection boasts that 386 million *yuan* (US \$48.2 million) was spent between 1996 and 2003 on the ecological "improvement" of the "Tibet Autonomous Region" - a sum that even accounts for every cash crop tree plantation and commercial poplar plantation surrounding irrigation projects.

What is omitted, however, is that between 1996 and 2000 according to the official 2001 *TAR Statistical Yearbook*, Beijing's domestic budget allocated 9.5 billion *yuan* (US \$1.19 billion) to the "TAR" for construction of environmentally destructive mines, highways, pipelines, factories and power grids. Therefore, for every *yuan* China expends on ecological "improvement," 30 *yuan* arrives from Beijing to construct mega infrastructure projects which directly contribute to the destruction of Tibet's environment.

Between 1996 and 2000, China at best has spent 41 *yuan* per year per km of the "TAR" on environmental remediation and 9.51 billion *yuan* (US \$ 1.19 billion) on financing the PRC's ongoing war against nature.

The 2020 Project report by China's State Development Planning Commission and the ADB explores the inadequacy of environmental funding and the confusion between rigid, mutually-exclusive bureaucracies in control of the task. The report concludes:

"Ecological improvement requires a high level of collaboration and co-ordination with other agencies... Environmental agencies cannot determine whether industries are complying with pollution standards and therefore cannot make informed decisions on whether to close down any industrial plant. The community cannot be reliably informed about environmental conditions... In the PRC there is a high overall rate of non-compliance with the full set of environmental regulatory requirements...

"The Western Region's industrial structure is such that in proportion to its total industrial output, it comprises more polluting industries than in the Eastern Region. In the Western Region, air emissions of pollutants per unit value of industrial output are above the national average... Nature reserve management: Urgent action is needed in the Western Region in three areas: Comprehensive coverage, integrated administration, and adequate funding.

"The reserves of the Western Region are incomplete; not all species, habitats or ecosystems are adequately represented. Many of the reserves have areas that are smaller than required to sustain an adequate habitat for the flora and fauna within them... The remoteness of many reserves, which initially served to protect those areas, leads to their neglect and mismanagement, and inevitably to their degradation...

"Virtually all reserves are seriously under-funded. Their staffs are few in number, usually under-trained and often underpaid and under-motivated, and vehicles and equipment are poorly managed and run. In pursuit of meagre funds, reserve managers exploit limited commercial opportunities, often with adverse effects."

On the ground in Tibet there are dedicated staff, both Tibetan and Chinese, who try to conserve the surviving biodiversity. Their task is made much harder by compartmentalised bureaucracies that restrict activities only to their defined responsibilities and fail to cooperate with each other. Additionally, a rigid personnel allocation system sends unsuitable people to work unwillingly in remote locations.

In Tibet, it would be far more productive to train and employ more Tibetans as park rangers as they are motivated to protect their own land and do not mind being stationed in harsh, remote locations.

A quote from Dr. George Schaller, the noted wildlife conservationist who carried out pioneering studies on Tibet's wildlife in the mid-1990s, dispels China's parochial view of Tibet's "passive adaptation to nature". In *Tibet's Hidden Wilderness: Wildlife and Nomads of the Chang Thang Reserve*, he writes:

"Tibetans have from time immemorial maintained wildlife sanctuaries around temples and in special preserves of

mountain gods. The Chang T[h]ang Reserve is a natural temple on a grand scale, a monument to Tibet's past, a sanctuary where the faithful can find inspiration..."

Before China's occupation, hunting of wildlife was decried in Tibet and only indulged in by the poor for survival. Few Tibetans hunted animals for use of their body parts in traditional medicine. Even then, culling was sustainable and carried out on very small scale since there were laws against hunting. In the tenth month of every year, a Decree (*Tsatsig*) for the Protection of Animals and the Environment was issued in the name of His Holiness the Dalai Lama.

The accounts of European adventurers of the late 19th and early 20th centuries write of the abundance of wildlife on the Tibetan Plateau. It was only after the massive influx of Chinese migrants and settlers in the wake of development activities in hitherto undisturbed wildernesses that an alarming decline in the populations of wildlife occurred.

The white paper's assertion that no single species has become extinct in Tibet appears to be true. But this vaunted claim doesn't tell us about the present state of Tibet's biodiversity. The escalation in human population and development projects over recent decades has been a major factor in the swift decline of the plateau's rich wildlife. The Tibetan antelope is on the verge of extinction; it was only after a huge international outcry against the trade in *shahtoosh* shawl wool that hunting of Tibetan antelope is now being curbed. Wild yak also face a similar if not worse fate.

Today at least 81 species of Tibet's mammals, birds, reptiles and amphibians are endangered and 125 animal species are officially listed as Protected Species by the PRC due to their dwindling numbers.

Today, China has declared the "TAR's" Chang Thang region a nature reserve. China's greatest rivers, the Yangtze (Tib: Driчу) and Yellow (Tib: Ma Chu) are also officially protected areas at their headwaters in Tibet. By the end of 2000 there were 17 national and provincial level nature reserves in the "TAR" accounting for around 40 percent of the total area of nature reserves within the PRC, according to reports of the State Environment Protection Agency of China (SEPA).

All this sounds impressive on paper, but the same 2000 SEPA report gives its total staff for "TAR" as 163 - the lowest among all China's provinces. It is evident that, in spite of designating large areas of the Tibetan Plateau as nature reserves, there exists a troubling gap between official policy and implementation capabilities.

The 2020 Project, report notes that in 1993 China ratified the Global Convention on Biological Diversity, but "progress in implementing it has been disappointing". The report notes that in the north-eastern Tibetan province of Amdo only 50,000 sq. kms of nature reserves exist, and in Sichuan Province - 42 percent of which by area is designated as Tibetan - there are only 28,300 sq. kms of nature reserves. This amounts to only five percent of the area of these two provinces.

The nature reserves designated by China, and mostly located in the coldest and most arid portions of the Tibetan Plateau, certainly exist on paper. Thus they form part of what China's 2003 white paper calls "a relatively systematic local legal regime concerning environmental protection". What China remains silent on is whether the laws and regulations are being implemented. In reality - as many international conservationists such as Dr. Schaller have pointed out - these reserves lack rangers, trained staff, vehicles and enforcement powers to bring poachers to book.

The 2020 Project report states:

"Conserving the residual native vegetation and repairing the damage from previous times should be a priority in the Western Region. However the program has several weaknesses. Various agencies with diverse interests administer reserves, often giving attention to a single aspect and without the knowledge or experience needed for integrated reserve management. Of 926 reserves established by 1997, 360 had no assigned administrative agencies, and of these 308 had no effective management... There are clear indications of deficiencies in nature reserve coverage. Significant ecosystems and species are inadequately represented, especially in the Western Region."

Some scenic areas of the plateau, like Zitsa Degu in eastern Tibet (Ch: Jiuzhaigou incorporated into today's Sichuan Province) not only enjoy legal protection from Beijing but also merit UNESCO World Heritage Listing. Zitsa Degu's inclusion was supposed to protect one of the last remaining Giant Panda habitats. Yet none of the endangered bears have been seen there for years. This is hardly surprising as one and a half million domestic tourists descend on Zitsa Degu annually, enabling entrepreneurs to turn the capital of Tibetan scenic beauty and pandas - plus the social capital of UNESCO listing - into huge financial profit. None of this eco-commercialisation is admitted in China's white

paper.

***Exotic, Non-native Species:
A Threat to Tibet's Endemic Wealth***

UNDP's *China Human Development Report 2002* states:

"China's flora and fauna are among the richest in the world; yet biodiversity is under severe pressure from population growth and economic development. Biodiversity is seriously threatened by human activities including deforestation, over-exploitation of animal and plant resources, pollution and the introduction of invasive species. Logging and land reclamation are two of the most serious causes of biotope destruction in China."

The deliberate introduction of exotic species is recognised globally as a threat to endemic indigenous species. Yet China's white paper reports the practice as an environmental achievement, and promotes it as increasing biodiversity.

"As Tibet opens wider to the outside world, non-native creatures such as carp, crucian carp, eel and loach, high productivity and quality cattle, sheep, pigs, chicken, ducks, as well as corn, watermelons and vegetables have been introduced from the inland areas to Tibet, where they are thriving today."

These exotic species thrive at the longterm expense of indigenous species now threatened by such invasive exotics. This is especially true of the many species of Tibetan fish, which were never harvested commercially prior to 1950, but are currently over-harvested by commercial fishing fleets on the plateau's larger lakes. Chinese migrants eat fish; Tibetans traditionally do not.

China's environmental white paper goes on to describe the establishment of nature reserves to protect the plateau's unique wilderness from exotic invasion. In the 21st century it seems Beijing is still unable or unwilling to distinguish biodiversity conservation from economic production.

The fact that Tibet's nature reserves are vast, remote, and have an inhospitable terrain and harsh climate, doesn't deter gangs of poachers with sophisticated weapons and 4WD transport from criss-crossing the vast uninhabited lands and slaughtering valuable wildlife. Now the new railway to Lhasa bisects the species-rich Chang Thang and its 23 stations provide easy access for hunters and smugglers of animal parts. This advent of the railway linking Tibet to Mainland China will increase the urgent need for better and more logistic support at the region's nature reserves, and more effective enforcement mechanisms to prevent wildlife poaching.

Making the nature reserves a real safe heaven for wildlife should be complemented by appropriate legal and regulatory systems - clearly lacking at present. There is an acute need for employment and training of rangers, with the power to enforce legislation against poaching endangered Tibetan antelope and other rare wildlife. The employment and training of local Tibetans to manage existing nature reserves is to be encouraged since Tibetans are compatible with the difficult terrain and also because their religion and culture preaches respect and care for wildlife and all nature.

***Wildlife Protection and Hunting Tours:
A Policy Contradiction***

A news report - "**Highland Hunting - New Tourist Attraction**" - in the 20 February 2002 edition of *People's Daily* reveals a disturbing hiatus between official policy and the ground reality of wildlife protection.

"The Dulan International Hunting Ground on the Qinghai-Tibet Plateau, known as the roof of the world, has become a popular attraction with foreign tourists in recent years.

"More than 600 hunters from a dozen of countries including United States, Germany, France, Russia and Norway had visited it by the end of last year.

"The hunting ground covers some 30,000 square kilometres in central Qinghai Province in northwest China. It is home to many hoofed animals including cliff goats, Tibetan antelopes, red deer and white-lip deer. The majority of Tibetan antelopes in the area are aged between 13 and 14 years, and are approaching the average life expectancy of 15.

"Wildlife protection is important in the region. Hunters are encouraged to shoot at the old and weak animals, said Yang Hongwei, deputy secretary-general of the Qinghai Provincial Wildlife Protection Association.

"Income received from admission fees has been used for wildlife publicity and protection, he added."

Until the mid-1990s, trophy hunting and hunting tours were a popular high value lure for tourists to "exotic" Tibet. In spite of the State's new awareness of biodiversity conservation, it is clear that hunting tourism still thrives. Apart from the above hunting tour advertised in the *People's Daily* online, there are a few Tibet-oriented websites that offer trophy hunting in Amdo and the neighbouring eastern and north-eastern provinces of Gansu, Xinjiang and Sichuan.

An Internet search reveals travel agencies and groups currently offering tours of the Tibetan rangelands to hunt endangered Tibetan species including blue sheep, argali, takin, ibex, and white-lipped deer.

Interestingly, the birthing grounds of Tibetan antelopes have only recently been discovered and reported. Dr. Schaller, the leading expert on Tibet's fauna, states that conserving this wildlife nursery is critical to the survival of the Tibetan antelope.

China claims an increase in wildlife numbers, especially Tibetan antelope. But two points need to be raised about the credibility of wildlife statistics. Firstly, researchers only started to study wildlife population trends in 2000. Secondly, since herds traverse a vast and open range spanning Xinjiang, Tibet and Gansu, the wildlife population must be studied over time and space before statistics can be taken as valid and accurate.

We welcome China's moves towards protecting biodiversity through the enforcement of new wildlife legislation and the State's ratification of international laws on biodiversity. But present reality falls far short of genuine species protection. It is our hope that Beijing will step-up efforts towards implementing official policy through enhancement of regulatory and enforcement mechanisms over biodiversity conservation.

Resource Extraction: State Of The Environment

Under China's constitution, all resources belong to the State and it is the prerogative of the State to develop and exploit natural resources. This allows resource exploitation to be carried out directly by the State or with its active support and approval.

The methods by which resource extraction is undertaken - without proper assessment of social and environmental impacts - is of urgent and grave concern. Due to rampant official corruption, and the connivance of district authorities, resource exploitation across the plateau is causing irreversible damage to the environment and causing hardship to local inhabitants.

As of today, there are no safeguards to ensure environmental regulations or systems in place allowing Tibetans to have a say and share in resource extraction enterprises. Under the present system, Tibet's natural resources are utilised by the PRC as a "national asset" and are being transferred to the resource-starved processing industries in eastern and coastal China. No benefits and "trickle down" effects accrue to Tibetans. An equal concern is that these resource extraction enterprises attract a large influx of direct and indirect Chinese labour to Tibetan regions - placing unsustainable pressure on the local environment's already overstrained capacity.

From Beijing's viewpoint Tibet abounds in natural capital awaiting commercial uses in China. Minerals, medicinal herbs, forests, glaciers, snow mountains and rivers all are targets for exploitation via Beijing's published plans to intensify the commercialisation of resources from its far west in the 21st century.

Water Resource Exploitation: Long-term Consequences

Although exploitation of Tibet's abundant water wealth is a key component of the current Western Development Program, the 2003 white paper seldom touches on this vital resource. Clearly this is because China's dam-building and water diversion agenda - and the State's international transboundary policies - directly threaten the integrity of Asia's river systems fed by the Tibetan Plateau and the survival of the millions of Asians who depend on them.

With the Tibetan headwaters of at least 10 Asian rivers feeding into densely populated countries like Pakistan, India, China, Nepal, Bangladesh, Myanmar, Thailand, Laos, Cambodia, and Vietnam, conservation of the origins of these waterways is of global concern.

The mighty Mekong rises as the Zachu River in Eastern Tibet's Kham Province and carries glacial melt down through China, Myanmar, Laos, Thailand, Cambodia and Vietnam. But China is now blocking its upstream flow with a mammoth 292-metre-high dam costing US\$6 billion which will displace 38,640 inhabitants by its completion date in 2013.

The Xiaowan Dam's 4200 mw capacity will allow Yunnan Province to sell hydropower to Thailand as an integral part of the infrastructure of the Western Development Program. China's new nationwide powergrid plans 14 new hydro-dams on the Mekong and Yangtze rivers - adding to the PRC's over 22,000 existing large dams.

While Thai industry gains, other downstream nations are fearful. Their foreboding is confirmed by Robert Tyson of the Smithsonian Tropical Research Institute, USA. This leading fisheries expert warns that, "The Chinese hydropower dams, canalisation 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." The head of 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.

Tibetan concerns differ from the fears of countries downstream on the Mekong. Southeastern Tibet is known by geologists to be rich in copper and gold reserves and a major zinc deposit is located to the north of Xiaowan Dam. Cargoes of Tibetan mineral ore can in future be shipped downstream to link up with a proposed Asian Development Bank-funded rail line to Lijiang on Tibet's southeastern border.

But perhaps it is the ecological and visual destruction of a region of legendary beauty and exceptional biodiversity that is most painful for Tibetans. The proposed US\$ 250 million dam on Megoe Lake (Ch: Mugecuo), 21 km from Dartsedo (Ch: Kangding) - the traditional Tibetan border town with pre-1949 China - will be a blight on Kham's most legendary and sacred lake. This pilgrimage lake at 4,000 m is surrounded by over 30 smaller lakes and a mountainous

landscape that draws ecologists, botanists, geologists and landscape photographers. It is a prime example of Tibet's ecological purity in its "primordial state" that Beijing proudly boasts of in its current white paper. And then, simultaneously, plans to destroy.

The Tibetan Plateau is also important in its own right as a geologically distinct home to diverse ecosystems. These headwaters support a rich variety of species of plants and animals compared to other drainage basins. China's white paper refers to Tibet's wetlands: "The Tibet Autonomous Region has more than six million ha of wetland, ranking first in China". But no mention is made of the PRC's current plans for a massive south-to-north water transfer project that would destroy the wetlands of Amdo's Zoige (Ch: Ruergai) region at the great bend of the Ma Chu (Ch: Huang Hao, aka. Yellow River) as it rounds the Amnye Machen mountain range.

Although the white paper says: "A policy is implemented ensuring that no new construction, reconstruction and expansion projects shall be authorized unless an evaluation of their impact on the environment has been conducted", the reality is that the western route of the proposed south-north water diversion project has been approved without conducting such a study. Preliminary work on the project is already underway and major infrastructure construction is scheduled to begin in 2010.

The project includes building at least three mega-dams and blasting a series of tunnels hundreds of kilometres long through the eastern Tibetan Plateau and mountain ranges, thereby diverting headwaters of the Yangtze into the parched, overexploited Yellow River of north China. When completed, the canals will divert up to 20 billion cubic metres of water annually to meet mounting water demands in the central and north-eastern provinces of China. The benefits to Tibet are zero. The costs include: Disruption of river hydrology; destruction of pristine ecosystems due to large-scale construction work to build massive dams and the innumerable explosions necessary to build tunnels through the Bayan Ha mountains; permanent disruption of the traditional livelihood of people living near the construction site; and dilution of Tibetan identity by a great influx of Chinese workers.

Critics envisage a "Chinese water-industrial complex" that perpetuates water-related construction work in China on a massive scale to further its own economic, ideological, and bureaucratic interests, rather than those of its people, or their natural environment. Consequently, Beijing's official water development policy is guided by technological fixes of supply management linking water-related construction to economic growth and national pride.

Internationally, China's non-participation in the 1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses highlights the State's antisocial practice of unilateral large-scale development on the upper reaches of transnational rivers - like the Mekong.

Deforestation

The UNDP's *China Human Development Report 2002* says: "There is probably very little mature forest left in China at all. China loses high quality mature forests in the northeast [Manchuria] and southwest [Tibet], while at the same time trees are planted in other parts of the country, but for other purposes."

State-owned enterprises, through their ubiquitous "quota system", continue to carry out clear-felling of Tibet's old growth forests, and these enterprises employ large workforces of non-Tibetan labour. The timber is trucked or transported by river to China. The State-owned enterprises then sell Tibet's timber resources at low State-controlled prices to other State enterprises, which manufacture railway sleepers, mine pit props and construction timber.

In 1987 an official Chinese publication revealed that in just one Tibetan prefecture - Kanlho in Gansu Province - extracted logs, if laid end to end, would encircle the planet twice. None of this ecological devastation of the Tibetan Plateau appears in China's white paper, which restricts itself to the so-called "Tibet Autonomous Region", omitting more than half the Tibetan areas of Qinghai, Gansu, Sichuan and Yunnan. But the most flagrant clear-fell logging and subsequent soil erosion happened in areas of eastern Tibet lying outside the "Tibet Autonomous Region" and today incorporated into China.

The wholesale deforestation of Tibet has had adverse impacts on wildlife due to destruction of habitat and the unprecedented human presence, which in turn leads to wildlife poaching for meat consumption, for skins and the sale of organs to the lucrative market for Chinese medicine. The devastating side effects of clear-fell deforestation on wildlife are well documented and publicised by global experts and NGOs.

Logging Ban: A Positive Move But Is It Effective?

In 1998, China announced a nation-wide logging ban, a welcome move that offers the promise of reforesting the barren slopes descending to the river valleys that are Tibet's water towers feeding Mainland China and most of South

and Southeast Asia.

In 1998 Tibetans could look forward to playing an active role in reforestation, a chance to be employed in restoring the balance of nature. It is now five years since the logging ban was imposed by Beijing on Tibet's provincial and local authorities, whose revenues relied on logging enterprises. Only five years ago China finally faced up to the stark choice between Tibet's lucrative timber trade and conserving water. Previously both commodities were viewed as a free supply of Tibetan natural capital.

The disastrous Yangtze River floods of 1998 forced Beijing's hand. China, rightly, chose water as the more precious commodity - a policy decision requiring that the upper reaches of watersheds be revegetated if extremes of flood and drought in China were to be avoided in future.

The UNDP's *China Human Development Report 2002* says that, with the ban on logging, Beijing has shifted the problem of deforestation to neighbouring countries that do not have effective law enforcement mechanisms.

However, inside Tibet, particularly in the eastern regions, we have strong reasons to fear that illegal logging still continues. Based on our eyewitness information, today it has simply become more expensive to acquire logging permits by bribing local officials. This merely adds to the cost, making timber a luxury commodity attracting more black economy operators to Tibetan regions.

Reports of the US Department of Agriculture monitoring the situation on the ground confirm the eyewitness testimony of refugees arriving in exile that logging continues. The UNDP's *China Human Development Report 2002* notes that: "Managers of State-owned forests are charged with the contradictory goals of making profit while at the same time keeping large workforces employed. There are strong incentives for managers to sell products through the black market."

Video footage filmed secretly in 2002 in south-eastern Tibet, near Markham, shows ongoing felling long after the logging ban was announced. The footage shows in detail the use of a new tactic to subvert the logging ban. In late spring, hillsides of mature pine trees are set on fire, killing the foliage but leaving the trunks largely intact. The blackened trees are officially worthless, so cutting is then permitted. This is carried out on a large scale, utilising a workforce of hundreds of labourers who not only cut the trees and mill them in logging camps, but also bulldoze in access tracks.

The footage shows square-cut sawn logs indicating that a portable sawmill has been trucked in - equipment available only to the State Forestry Bureau. After hasty removal, usually by trucks arriving at night, the floor of the former forest is littered with rejected trunks, bark, branches and a tangle of residue.

The spindly, charred trunks of trees too immature for commercial use remain standing, but local Tibetans inhabitants are forbidden to clean up the slopes and make use of the waste wood. Nor are Tibetans employed to do the logging; only immigrant Chinese. The scale of operations and methods suggest this could not be happening without official knowledge.

The video footage reveals sheet erosion and the steep gullies that result from this catastrophic loss of mature forest cover. The only area where reforestation has been attempted is along major roads travelled by foreign tourists.

The burning of a forest that does not readily or naturally ignite - and is not adapted to a fire regime - is especially harmful to regeneration, and burning in late spring kills many animals rearing their young. Other wildlife is caught in steel traps widely used by immigrant labour. In addition, the livelihoods of neighbouring Tibetans - who historically enjoyed a cash income by collecting forest mushrooms to sell to the international shitake market at good profits - are adversely affected.

Markham region is at the farthest eastern edge of the "Tibet Autonomous Region" - remote from Lhasa - and it seems the local Forestry Bureau office was closed when logging officially finished after 1998, so no government policing of the forest wealth exists today.

Aerial Sowing and Mountain Closure: Inappropriate Ways To Reforest

In the aftermath of the catastrophic 1998 Yangtze flooding, China's immediate ban on logging was a clear signal that deforestation was acknowledged as a major contributing factor. It is certainly true that deforestation results in the increase of sediment loads in rivers and a loss of the water-retaining capacity of watersheds. Deforestation also can affect the flow of rivers and cause flooding. However, two other important factors that trigger floods - loss of wetlands and river engineering along the lower regions in China - are relevant, particularly to the PRC.

At present China has put its money on reforestation alone to tackle flooding. The logging ban was therefore a blessing in disguise for the forests of Tibet.

This has an important bearing on the way China has implemented reforestation in the Tibetan region. Reforestation is the official policy. The way it is carried out, according to reports published by Chinese ecologists of the Sichuan Academy of Forestry in 2001, excludes Tibetan communities from any benefit, participation, compensation or employment opportunities.

The ensuing "mountain closure" policy today covers nine million ha - or one third of the western region of Sichuan Province high on the Tibetan Plateau. The method China commonly uses to sow tree seeds is by dropping them from aircraft. Not only is this ineffective, it also excludes Tibetan communities from involvement in eco-husbandry. Without acknowledging the enormous extent of its deforestation activities, Beijing's white paper lists methods of reforesting Tibet, all of which exclude active participation by Tibetans. "Tibet has adopted measures consisting of afforestation, aerial sowing and closing off hillsides to facilitate afforestation," the paper boasts.

According to China's own statistics, it will take 50 years at best before reforestation shows results. Yet the destruction of these forests began in the 1950s, and the erosion of steep denuded slopes has worsened ever since.

In formerly forested areas, compensation from Beijing goes solely to Chinese enterprises and local authorities to ensure that non-Tibetans employed in the State-owned logging companies continue to be paid salaries. This is confirmed by studies carried out by Chinese scientists commissioned by the China Council for International Cooperation on Environment and Development, chaired by the PRC's new Premier, Wen Jiabao.

The 2002 joint report by the State Development Planning Commission and the Asian Development Bank says that under current State Forestry Administration plans for Western China "the restoration of degraded lands would take more than 50 years. The rate of planting must be increased, particularly where erosion continues to cause costly damage".

Another aspect of the new reforestation policy - the grain for green approach and conversion of farmland to grassland and forest - has further victimised Tibetan farmers and nomads. Clear-cutting of forests is mostly irreversible on the plateau due to the high altitude and harsh climate, and reforestation is a huge challenge. Today reforestation is underway in regions which were not forestland traditionally but were either farmland or grassland. Logically, reforestation should take place in areas where clear-felling was inflicted over the past four decades.

At present reforestation seems to focus on fertile lower-lying valleys where the survival of plants and seedlings are certain. This causes tremendous pressure on Tibetan farmers and nomads to accept and endorse the reforestation and conversion of their farmland and grassland - eventually depriving them of their own land. China-Tibet Information Centre in Lhasa recently carried reports of resettlement of Tibetans from Kham's Gonjo County to other Tibetan areas in Nyingtri Prefecture as part of the reforestation of the upper reaches of Yangtze River. The resettlement will displace and deprive the Tibetan farmers of their basic subsistence.

Alongside the reforestation programme, farmers and nomads are being forced to plant shrubs and other species that grow quickly. But no longterm impact studies of planting new species have been carried out, nor of the threat to livelihoods of these farmers and nomads who find the introduced species useless either for food for themselves or as fodder for their livestock. The State promises grain and subsidies for a few years, at the end of which affected farmers and nomads are expected to fend for themselves.

Land Reclamation: The Vehicle to Escalate Chinese Settlement

The PRC has devised a special policy which it claims will encourage sustainable land use. This new piece of bureaucratic fine-tuning suggests "the lasting and inheritable practice of whoever reclaims the land shall be entitled to operate and get benefit from it". The new policy covers "tree-planting and grass-growing on barren mountains, hillsides and beaches". This is a classic colonist way of looking at Tibet as a barren wasteland that needs to be developed and conquered. There are already cases of reclamation of common land - normally used by Tibetan farmers to graze their livestock - by outsiders for development purposes in Tibet.

Recent interviews of refugees from the "TAR" relate the hardships Tibetan farmers now experience in finding grazing for their livestock. China's reforestation and reclamation of land programmes have clear potential longterm benefits for Tibetans, provided that they do not lose land use rights and are fully empowered to become the permanent stewards of forests. For Tibetans to adjust their land use and forest use practices they will have to believe in the benefits of forestry-related activities.

The minimum benefit for Tibetans needs to be the guaranteed right of access to their forest resources to satisfy subsistence needs. But, furthermore, they need to be guaranteed direct benefits from Beijing's programme to reforest the huge tracts of Tibet that previous communist policy deforested.

Mineral Exploitation Industries: Marginalising Tibetans

The PRC's forward planning concentrates massive capital investment in largescale infrastructure projects to extract natural gas from Tibet, mine copper and chromite, and intensify exploitation of Tibetan salt lakes from which China takes the raw materials to make plastics, chemical fertiliser and magnesium. Chromite is much needed in the Mainland. The manager of General Motors, who is also a member of China's National People's Congress, predicts that within 10 years 500 million Chinese will buy a family car. (*People's Daily* 12 March 2003). If this consumerism does happen, China's need for Tibetan chromite will spiral and add hugely to the global load of greenhouse gases.

Areas of the Tibetan Plateau bordering Mainland China are already highly industrialised, with little attention paid to pollution control. In the arid Tsaidam Basin of Tibet's far northeast, oil fields pump two million tons of crude oil annually to nearby petro-chemical refineries. Asbestos mining, aluminium smelters, and lead and zinc mining are expanding under the patronage of the centre. Tibetans are powerless to appeal for pollution control equipment to be installed, because the factories are owned and run by the same people who are supposedly in charge of environmental protection.

China's current Tenth Five-Year Plan, and The 2020 Project, both outline further exploitation of Tibet's resources and envisage massive State investment in the transport and urban infrastructure needed to effectively access and convey those resources.

That Tibetan communities are powerless is 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 the complete lack of pollution control equipment, toxic fluoride-laden smoke pours from this smelter, causing flourosis - loss of teeth and stunted growth - in livestock, especially sheep, due to contaminated grass and the poor grain harvest. All appeals to the authorities have gone unanswered. Tongren County owns the smelter and the revenues from the aluminium processing pay the salaries of the local administration.

A 1996 Beijing-based US Embassy report on illegal gold mining in China - focussing particularly on Tibet's Amdo Province - suggests the connivance of local authorities with illegal miners in the rampant and uncontrolled gold mining on Amdo and Kham's fertile grasslands. The mining methods utilised by the miners leave the grasslands devastated and future mining unprofitable due to the short term and highly destructive techniques used. The region's nomads are powerless to prevent this ecologically devastating encroachment on their traditional grasslands.

In spite of introducing positive environmental legislation, China's capacity to regulate these laws is clearly undermanned and under-motivated. These limitations are compounded by the fact there is no co-ordination between the various ministries.

The Railway: Route For Resource Extraction

A transport infrastructure is one important factor in the upcoming economic development of China's western regions. However, there is debate among economists over whether a transport infrastructure triggers economic development or vice-versa. It is obvious that major investment in transport infrastructures are only part of the equation. Investment in social services matters, and we believe social infrastructure is the key to overall development of a society.

From an economist's point of view, Tibet's transport infrastructure - particularly the railway now being laid to Lhasa - is being implemented well ahead of demand in the hope that reduced transport costs will encourage business to move to Tibet.

Whether the Gormo-Lhasa line will in reality reduce transportation costs and raise per capita income potential in Tibet depends on its impact on market and supply-access conditions. In Tibet the market factor is woefully low and experts anticipate that there is no way this railway project can ever become commercially viable. But, as former President Jiang Zemin admitted to *The New York Times* during his American tour in August 2001, this railway project is a political investment.

Highways and railways are fundamental to China's ambitions to extract Tibetan resources to fuel distant Chinese cities and factories and to consolidate military control over the Tibetan region.

The first railway into Tibet, from China's Lanzhou to Gormo via Siling (Ch: Xining) enabled China to establish its

first Tibet-based petro-chemical industrial base in arid Gormo, and to take at least 15 million tons of Tibetan oil and petroleum products to Lanzhou refineries by rail. Another 40 kms of special railway track was later laid to connect to China's nuclear weapons research and development facility in Haibei (Tib: Tsojang) Tibetan Autonomous Prefecture.

Now this route is being extended through from Gormo in the northeast to Tibet's capital, Lhasa at a cost to the State of US\$ 3.2 billion. This will facilitate China's exploitation of valued chromite deposits located on the route, and open up newly-identified Lhunpola oil basin in Chang Thang. China's passenger targets for the Lhasa railway, when it is completed in 2007, project two to three million domestic tourists a year, swamping sacred sites with photographers seeking exotic Tibetans to film. This will stimulate a tourist infrastructure - resorts, hotels, and luxury villas for China's new-rich - all of which will greatly increase the demand for electricity, water and other resources in Lhasa and the surrounding countryside. This will further strain the capacity of the land to feed the ever-growing population of Chinese settlers.

One of the few sections of China's white paper that is detailed and specific is on policies during the Lhasa railway construction to mitigate environmental damage. No independent scrutiny of the implementation of these policies is permitted.

The rail line is being built on high embankments for nearly all its 1,142-km length to keep the railbed permanently frozen. This requires massive earthworks, which, as the white paper admits, slice through migratory routes of endangered species, and across vulnerable wetlands that freeze and thaw at the surface while staying frozen at a deeper level.

For 50 years China has failed to construct any highway that withstands the alternate freezing and thawing, the heaving and slumping, of a unique zone of seasonally frozen earth. China does not understand the basic dynamics of Tibet's terrain. Yet now its railway project is displacing much more earth than any project in history.

How will China prevent the tunnelling, rock blasting and bulk earthmoving from triggering further degradation of a frigid rangeland that's vulnerable to disturbance? China's white paper explains: "The headwaters and wetlands along the railway line are to be specially protected to avoid desertification in the headwaters areas, shrinkage of wetlands, deterioration of grasslands and water pollution that might be caused by the construction. Attention is to be paid to the protection and regeneration of ground vegetation."

Unfortunately, the white paper doesn't spell out how this can be achieved, saying only: "the turf should be preserved and replanted in other places section by section, to be moved back to cover the slopes". It also suggests: "grass seeds suitable for plateau areas should be carefully selected and planted with appropriate means of cultivation to restore as much as possible the ground vegetation that existed before the railway construction". What is not stated is whether Chinese scientists know which species of vegetation are suitable, can withstand transplanting, extreme cold, gales, blizzards and the grazing pressure of both wild and domestic animals.

Chinese scientific experiments with introducing grasses to Tibetan pastoral areas have so far produced poor results, requiring nomads to fence the sown grasses and later cut and transport the fodder to their animals, otherwise these delicate exotics easily die.

Whether China actually knows how to minimise and repair the damage currently underway as the railway crosses sensitive Tibetan wetlands is doubtful. China's white paper 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 are begun, solutions and cures should already be established.

The rail route chosen by Beijing, as the Chinese white paper concedes, cuts through three officially-protected nature reserves of Hoh Xil, Chumarleb and Soga - all habitats of endangered antelope and gazelle. China's technical solution to the bisection of their migration routes is to build tunnels, in the hope that the herds - despite a schedule of eight trains each day in each direction - will pass beneath the busy tracks.

Looking to the future

The biggest flaw of China's policies over 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 set 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 catching up fast with the Mainland's 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 PRC. Implicitly, this model ignores the possibility that differences in Tibet's social and natural conditions can be of developmental value.

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

Lessons From An Ancient Chinese Proverb

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. China's white paper reveals the human-centred assumptions the nation makes towards nature. 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 beings - including generations yet to be born.

China's own view of progress is evident from the first paragraphs of its white paper: "It was after the peaceful liberation of Tibet that ecological improvement and environmental protection started there... [which] enabled the Tibetan people to achieve a qualitative leap from the centuries-old passive adaptation to natural conditions to remaking nature on their own initiative."

One of the most detailed academic studies on contemporary China is Professor Judith Shapiro's *Mao's War on Nature*. Mao Zedong is long gone, but his destructive approach in seeing nature as a free public good persists among central planners. In a dictum reminiscent of Mao, China's white paper announces: "To ease the contradictions between human beings and farm animals and between grass supply and farm animals... 'no-grazing' areas have been designated. Efforts are being intensified to prevent or control hazards caused by mice, insects and poisonous weeds."

It seems the State has learned little from its decades in charge of Tibetan grasslands. The nomads and the ozone hole are being blamed for pasture degradation, and rare wildlife remains under pressure. When Tibetans were free to graze their own grasslands, there were no so-called "contradictions" between human beings and their livestock.

Despite the current crisis on Tibet's grasslands, China's white paper concludes that "most parts are

basically in a primordial state". Yet China's attitude to the primordial is that it is "a passive adaptation to natural conditions", an enslavement to nature: "Grassland overload was not significant in the old days in Tibet, because of stagnant population growth, frequent natural calamities, and massive human and livestock deaths in times of snowstorms."

China's current white paper on Tibet's environment is seldom specific, and it is particularly vague about the first three to four decades under China's control post-1950. There is mention of scientific surveys, and "a proposal for scientific development and utilisation, which started the process of scientific understanding, utilisation and protection". But China has been unable to differentiate between utilisation and protection, between "a scientific basis for making better use of natural resources in the economic development of Tibet, and for making continuous improvement of the human living environment".

The paper mentions surveys and regulations, which have not been implemented, as the only positive achievements until the 1990s. But it is silent on the devastation of those long decades, resulting in the decimation of Tibet's wildlife to the verge of extinction - the Tibetan antelope being a prime example. China's decision to build and test its first atomic and hydrogen devices in the northeastern Tibetan Prefecture of Haibei (Tib: Tsojang) and the dumping of radioactive wastes in the region is similarly glossed over. Nor is any mention made of Chinese nuclear missile bases at Delingha (Tib: Terlenkha), Datong (near Serkhog), and Da Qaidam (Tib: Tsaidam) in northeastern Amdo.

Our Appeal

China is inviting the world's environmental NGOs and development agencies, big and small, to invest their projects in Tibet. Already many international organisations 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. China can learn to include rather than exclude civil society from the forests and the grasslands, and to include Tibetans as active stakeholders with the right to participation. We only welcome international involvement to empower Tibetan communities and to articulate their aspirations skilfully and introduce into China the experience gained elsewhere in the world.

Under China's constitution Tibetans are entitled to nominal autonomy. Many international agencies have learned to be sensitive to traditional knowledge, small-scale, locally-controlled projects, and to respect the community-based organisations Tibetans have always been guided by. The standard methods of participatory rapid appraisal of local needs may not work in the case of Tibet. There is a special need to find innovative and skilful ways to involve people and to understand their aspirations, without compromising the integrity of international organisations committed to standards of genuine participation and freedom of expression.

While we welcome partnerships with Chinese authorities that introduce constructive projects in Tibet, we are concerned - for the sake of both the land and its populace - 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 local communities and enabling them to own and maintain environmental improvement projects. Large-scale projects, especially heavy infrastructure and industry, are not suitable development investments for the Tibetan Plateau.

It is obvious that the rural Tibetan population - the nomads and farmers - should be made the centre of economic and environmental planning. China's leading political economist, Hu Angang, advises, "the choice of road to modernisation should always be built upon the basic principle of 'the wealth of the people at root, investment in the people', to make the people who constitute the population's absolute majority - the peasant farmers and herdsmen - the principal, direct and general beneficiaries."

Tibetan economists and social scientists have for some years advocated investment in strengthening the sustainable yields, varieties, and added value of the agricultural products of the traditional economy. This approach not only creates wealth but also reduces the need for subsidies. Agriculture and animal husbandry are low on consumption compared to industry, and have the advantage of being labour-intensive, and with large elasticity for substituting funds. It is obvious that agriculture, animal husbandry and indigenously characteristic industries, must be the main development priorities for Tibet since they have the greatest potential with comparatively low investment to benefit the majority farmers and nomads and uplift their living standards.

Putting farmers and herdsman first is not new thinking in global development circles. But in China - with the nation's strong traditions of centralist control of the countryside - this is a new approach. The rhetoric of participation is common. In asking for active Tibetan participation to be structurally inbuilt in development projects a standard is 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 help resolve any obstacles in dealing with the Chinese bureaucracy. This contributes to promoting governance, 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.

The top development and environment priorities in Tibet today are:

- decentralised and culturally sensitive projects;
- better coordination between different ministries involved in environmental protection to improve the regulatory powers to control the negative environmental impacts of development activities - particularly resource extraction and infrastructure development;
- investment to improve logistic support and enforcement mechanisms in the management of nature reserves;
- training and genuine participation of Tibetans in sustainable management of natural resources;
- support for pastoral mobility and rangeland quality. This includes flexibility of land tenure including guaranteed access to seasonal pastures, employment of local Tibetan communities in grassland regeneration, decentralised veterinary care, introduction of hybrid breeds suited to Tibetan conditions, encouragement of producer marketing and small-scale value adding under local control. This also means provision of portable solar power rather than connecting pastoral families to a fixed grid, which forces them to settle, to the great detriment of rangeland quality, causing erosion, loss of production and poverty;
- support for Tibetan farming communities to minimise dependence on chemical fertiliser and pesticides, while maintaining productivity, with guaranteed access to suitable land. Local cooperatives under community control should be encouraged, to add value by processing rural products and improve incomes;
- promotion of off-farm employment opportunities that do not break up families or require de-population of the countryside.