



# IS TIBET PART OF THE PROBLEM OR PART OF THE SOLUTION?

Number 7 in a series of 10 briefings on climate and Tibet

In the accelerating global change of climate, Tibet is a substantial portion of the earth's surface. Because Tibet is remote, its six million people silenced, people sometimes suppose Tibet must be small, but the two and a half million square kilometres of the Tibetan Plateau constitute close to two per cent of the land surface of our planet. So if the land of Tibet is not part of the planetary solution to climate change, it becomes part of the problem.

Is the Tibetan Plateau naturally part of the solution, naturally a carbon sink sequestering more carbon than it emits? Or is the plateau, an area as big as western Europe, a net emitter of greenhouse gases, since it has little forest, is mostly grassland or rock, and has tens of millions of livestock, each an emitter of climate changing gases?

This calculation has been done everywhere on earth, but Tibet has been so remote it is only recently clear what part Tibet naturally plays in greenhouse gas emissions, what part industrialisation plays, and whether Tibet overall captures more climate changing gases than it emits, or is it the other way round?

Knowing the natural capacity of the grasslands, forests, wetlands and other habitats of Tibet to capture and sequester carbon is an essential starting point, a baseline in assessing Tibet's future role as a provider of environmental services for the planet, especially for the peoples of Asia who rely on Tibetan rivers and the monsoon rains generated by the annual heating of the Tibetan Plateau.

In 2006 a team of Japanese and Chinese scientists measured the air immediately above the grazed grassland of Tibet, finding that grassland does sequester carbon, naturally contributing to the urgent global need for more carbon sinks. Professor Kato and colleagues found Tibetan grassland sequesters as much carbon as do the pine forests of Finland or subalpine forest in the Rocky Mountains of the US. Since the 1980s Chinese scientists have consistently reported that soils under alpine pasturelands are generally high in organic carbon because of low temperature and well-developed vegetation as a result of natural succession, with a wide but stable variety of plant species. Although a grazed grassland may, to most of us, not look as dramatic as a forest, in fact most of the carbon biomass is below ground, a characteristic of the hardy sedges and grasses of Tibet, which are well adapted to cold, gales and grazing. According to Prof Fan, of China's Key Laboratory of Ecosystem Network Observation and Modeling, in a 2008 report, there is as much as 52 times the carbon underground in Tibetan grassland compared to the amount above ground. A typical Tibetan alpine grazing meadow is one of the world's great carbon stores.

Anywhere in the world grazing livestock produce greenhouse gases, not only carbon dioxide but also methane, and this is true of Tibet's herd of yaks, sheep, goats and horses (and wild antelope, gazelles etc). But overall, Tibet, in the sustainable state of pastureland created by nomads over thousands of years, has been a benefit to the planet, as a carbon store.

However, many scientific studies have recently shown that as Tibetan grasslands degrade, there is a huge loss of soil carbon, plus methane emissions from the dying vegetation, especially in wetlands as they dry and die. As Tibetan soils lose their carbon, due to past policy failure and climate change, they also lose the ability to hold water. Prof Xie and his global team reported in 2008 that "Our estimations suggest that soil organic carbon was lost mainly in the Northwest and Southwest part of China and mainly due to the degradation of grassland."

Although China is now the biggest emitter of climate warming gases in the world, Tibet contributes almost nothing to the total. In 2006 Chinese scientists (Cao) inventoried each Chinese province's carbon emissions, finding only the newly industrialised areas of Tibet around Xining city were significant sources of black carbon particles and organic carbon emissions.

Tibet is fast losing its historic capacity to sequester carbon, as glaciers melt, as erosion replaces living turf with bare rock, as desertification follows in the wake of industrialisation, the fencing-in of nomads, rivers are dammed and mines pile up waste. As wetlands die, in the retreat of the permafrost, methane is emitted from degrading, dying and desertifying pasture and wetlands. China has invested little in reversing or even halting this degradation, blaming it entirely on global climate change rather than past policy mistakes.

Instead of seeing Tibetans leading nomadic Tibetan lives on Tibetan lands as problematic, requiring their removal if watersheds are to be conserved, Tibetans want to be part of the solution.

The nomads of Tibet grieve, not only for their livelihoods but also for their cherished animals and for the land as they see the pasture degrade, blacken and die under the pressure of climate change, extreme weather, decades of state enforced compulsory overstocking, imposition of fencing and other restraints on nomadic mobility and flexibility, a policy of

sedentarisation and now urbanisation.

The nomads of Tibet have seldom been given a chance to show they can be part of the solution. Instead they are removed, without choice, labeled “ecological migrants” by a state that declares their subsistence economy irrelevant at a time when China’s over used rivers run short of water.

Official policies actually blame the nomads for the pest plagues, invasive weeds, pasture degradation and erosion which all undermine the nomadic way of life Tibetans pioneered 8800 years ago, according to the latest archaeological evidence.

While official policies exclude any ongoing role for nomads, NGOs working with Tibetan nomads have shown there can be fruitful partnerships engaging nomads and conservation programs. Marc Foggin reported in 2008 on the success of community co-management in Drito county (Zhiduo in Chinese), in the heart of the area China defines as its water tower which requires rigid exclusion of nomads.

An NGO called Plateau Perspectives [www.plateauperspectives.org](http://www.plateauperspectives.org) has shown how to achieve China’s biodiversity conservation goals of caring for the habitat of snow leopards, rare cranes and wild yaks, not by excluding nomads but by including them in co-management decision making, in which the nomads “promote socioeconomic development as they see fit.” In the academic journal Mountain Research & Development the nomads are clearly part of the climate change/ biodiversity loss problem: “Involving Tibetan herders in community development and conservation planning has never been a fast road to travel, but it is the only route by which a more equitable and sustainable future can be reached. Good progress in community-based development and conservation has been made—in itself a noteworthy achievement. This model for combining conservation and development in the heart of the Tibetan plateau could usefully be applied more widely in China’s grasslands, and possibly more generally throughout western China.”

That’s just one of many international NGOs doing practical work in Tibet, to improve health, raise incomes, improve farmers’ crop yields, lift education quality, conserve wildlife and maintain the viability of the nomadic way of life. NGOs in Tibet are committed to close partnerships with Tibetan communities, with Tibetans making decisions for their future. There are plenty of positive examples now of community co-management of projects which achieve China’s objectives of remediating degraded grasslands while also including Tibetans as genuine partners.

The land and people of Tibet can be part of the global solution to climate change. But right now the land is degrading, increasingly becoming a source of carbon emissions rather than a carbon sink. Right now the nomads are being rapidly excluded from the lands they curated sustainably for centuries. Only if the wider world takes interest in Tibet will China be encouraged to ensure Tibet and Tibetans are part of the solution.

#### WANT TO KNOW MORE?

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NGOs doing development work in Tibet in partnership with local Tibetan communities are listed at: <http://www.cwru.edu/affil/tibet/NGOProjects.htm>

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