

GREEN GOVERNMENTALITY AND PASTORALISM IN WESTERN CHINA: 'CONVERTING PASTURES TO GRASSLANDS'

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Abstract

One of China's newest large-scale 'ecological construction' projects, 'converting pastures to grasslands' (*tuimu huancao*), calls for the creation of three new types of zones on existing pastures: zones in which grazing is to be permanently banned, zones in which grazing is to cease for a period of several years, and zones in which pasture is to be seasonally closed. This project is likely to significantly alter the livelihoods of tens of thousands of pastoralists living in Western China. The paper discusses the policy context in which *tuimu huancao* emerged, analyzing both continuities with and disjunctures from previous ecological restoration and rangeland management policies, including 'Open up the West,' the Sloping Land Conversion Project, and the 'four that form a complete set' (*si peitao*). Differences suggest that *tuimu huancao* constitutes a deepening of state control over territory, and can be understood as an emergent form of green governmentality in China. The paper then discusses *tuimu huancao* implementation on the Tibetan plateau, specifically in Qinghai and Sichuan provinces. Finally, directions for future research are outlined.

Keywords: China, ecological restoration, governmentality, rangeland policy, Tibetan plateau

Introduction

Since 1998, China has launched a suite of large-scale projects aimed at 'ecological construction', particularly in its western provinces. This article addresses one of the newest of these projects, and the one that will most directly affect China's pastoral peoples. Named *tuimu huancao*, the programme calls literally for 'retiring grazing/pastures to restore grasslands'. (However, this is translated here to the slightly less awkward 'converting pastures to grasslands'.) At the core of the programme is the delineation and implementation of three new types of zones on existing pastures: (1) zones in which grazing is to be completely and permanently banned (for the areas with the most serious degradation); (2) zones in which grazing is to be ceased temporarily, generally for a period of three to ten years (for areas which are moderately degraded); and (3) zones in which pasture is to be seasonally closed or managed with seasonal rotational grazing (for areas which are only lightly, or not degraded).

Considerable ambiguity surrounds *tuimu huancao*. Different government and news reports provide contradictory information on such basic points as when the programme was first launched, and how large implementation areas will be in different provinces. Detailed information about on-the-ground implementation is extremely limited; thus, this preliminary analysis relies primarily on official reports about *tuimu huancao*, leaving detailed case studies comparing these accounts to local realities to future research. The main goal of this article is to discuss the policy context in which *tuimu huancao* has emerged, showing both continuities with and disjunctures from other policies governing environment, development and rangeland management in western China. In doing so, I argue that *tuimu huancao* constitutes a deepening of state control over territory, and can be understood as an emergent form of green governmentality. Drawing on available information, examples are also given of implementation. Finally, the article outlines questions for future research.

Open Up the West

China's 'Open up the West' campaign (*Xibu da kaifa*) was launched in 1999 to help the western provinces of the PRC finally 'catch up' with the east, after twenty years of growing regional economic disparities. 'The west' has never been a well-defined region in China with its own distinct or unique identity – a fact reflected by multiple changes in the provincial composition of 'Open up the West' – but by October 2000 its new definition came to consist of Sichuan, Guizhou, Yunnan, Shaanxi, Gansu and Qinghai provinces; Chongqing Municipality; and the five autonomous regions of Tibet, Ningxia, Xinjiang, Inner Mongolia and Guangxi (Goodman 2004). Thus defined, 'the west' is home to about three-quarters of China's ethnic minority population; roughly 85 per cent of the country's total grassland area of 400 million *mu* are located in this large and economically diverse region as well (1 *mu* = 1/15 ha). The two-pronged strategy of the campaign consists of first, major investment in infrastructure projects to attract private and foreign investment in enterprises linked to the global economy; and second, 'ecological construction' – investment in major environmental protection projects.

Tuimu huancao did not originate specifically as a component of the 'Open up the West' campaign. However, it is now frequently described as part of it. In 2003, for example, the Western Development Office of the State Council listed the restoration of 100 million *mu* of pasture to grassland as one of fourteen 'key projects' for the western region.¹ According to the Director of the Office of the State Council Leading Group of Western Development, 'the implementation of *tuimu huancao* is an important decision made by the Communist Party and central government under the strategies of sustainable development and Open up the West'.² Furthermore, a 2005 Ministry of Agriculture document making recommendations for its implementation was sent only to the Animal Husbandry Bureaux of provinces that fall under the 'Open up the West campaign'.³

Such reports suggest that *tuimu huancao* may be exclusive to China's western provinces. On the other hand, a 2003 report by the Ministry of Water Resources claimed that Shanxi and Hebei, neither of which falls under Open up the West, 'announced grazing bans on *all* their grasslands.'⁴ Furthermore, in 2003, Hebei Province issued 'The Regulations on the Grazing Ban and on Animal Pens and Forage', which requires all livestock to be raised in pens rather than grazed on the range.⁵ However, the term *tuimu huancao* itself does not appear in these reports. Regardless of official classification, the programme of 'converting pastures to grasslands' will clearly have its greatest impact in western China, both because 85 per cent of the country's rangelands are to be found there and because of the broader value assessment, discussed below, of the western provinces as being ecologically degraded and economically underdeveloped compared to the better-off east.

Green Governmentality

The other immediate policy context for *tuimu huancao* is a pair of national programmes which were implemented in response to two critical events: massive flooding along China's Yangtze River in the summer of 1998, and a drought in 1997 that dried up some sections of the lower reaches of the Yellow River for a record 267 days, putting agriculture, industry and cities on the north China plain at risk. These programmes were the Natural Forest Protection Program (NFPP; Ch: *tianranlin baohu gongcheng*) and the Sloping Land Conversion Program (SLCP; Ch: *tuigeng huanlin huancao*; 'return croplands to forests and grasslands'). NFPP is essentially aimed at altering the management of state-owned forests, in many places through a complete ban on logging. SLCP, on the other hand, retires cultivated land on steep slopes and converts it to tree and grass-cover, depending on the nature of the original vegetation. Because farmers are to be given grain subsidies for several years as an incentive for planting trees and grass on their cropland, this programme is also sometimes referred to as 'grain for green'. Together, NFPP and SLCP have been referred to as the 'largest environmental rehabilitation effort in the world' (CCICED 2003: 3). Though both are nation-wide projects, they were initially motivated by specific concerns about the upper and middle reaches of the Yangtze and Yellow Rivers, and much of their target implementation area continues to be in western China.

Farmers and loggers are the most directly affected by these programmes, but SLCP has implications for pastoral livelihoods as well. Winkler (2002, in press) notes that in Litang County, Ganzi Tibetan Autonomous Prefecture (TAP), Sichuan, local communities consider clear-cut areas to be valuable grazing grounds, while the Forestry Bureau considers the same areas to be forest. Thus far, fencing of afforestation plots is rare, in part because of prohibitively high costs (though fencing is being extensively implemented in pastoral areas, as discussed

below); instead, wooden battens are inserted around spruce seedlings to protect them from livestock trampling and biting. My observations suggest that this practice is widespread throughout Ganzi TAP, but is of limited utility. According to one forest guard in Sertar County, ‘we like to plant seedlings, but we are worried that they will grow into big trees and reduce our grazing area’ (Winkler in press). Thus far, the divergent land uses desired by herders and the forestry bureaux has not been resolved.

The phrase *tuimu huancao* did not appear in policy statements until after implementation of SLCP had begun. When first introduced, it was often portrayed as a local variation of SLCP, an ‘SLCP for pastoral areas’. For example, a description of early SLCP implementation in Qinghai province states, ‘one special characteristic of the SLCP in Qinghai is the inclusion of a grassland restoration component, along with the more standard cropland conversion agenda’ (Shen et al. 2004: 303). Despite its late start, *tuimu huancao* has quickly gained a prominent place in the broader discourse about state-led environmental protection. It now appears in policy discussions as a separate project, rather than as part of SLCP. One 2004 news article compared *tuimu huancao* to cropland SLCP as follows: ‘the special characteristic of *tuimu huancao* is that it has a smaller investment but will become effective more quickly.’⁶

Together, SLCP; NFPP; a programme known as the ‘ecological compensation scheme’ (*shengtai xiaoyi buchang*) which pays for ecological services in secondary forests, the ecological discourse of the ‘Open up the West’ campaign; and *tuimu huancao*, form a suite of projects that indicate China’s emergence as an environmental state. Whereas economic development during the Maoist period was based on large-scale extraction of timber and the cultivation of new cropland on steep slopes, directed by slogans such as ‘take grain as the key link’, these new environmental projects appear to seek to do the opposite, to redress ecological damage. Yet these projects cannot be understood simply as manifestations of an unproblematic and finally achieved ecological rationality. Elizabeth Economy (2004) has criticised the implementation of these projects for their ‘campaign style mentality’ reminiscent of the Maoist era. Beyond this, however, these projects also define certain peoples and types of nature as needing ‘improvement’, thus legitimating new forms of scrutiny and control. For example, in a speech in February 2005, Chinese Premier Wen Jiabao contributed to an emergent definition of the west as a coherent territory characterised by degraded landscapes and impoverished peoples. He explained the development priorities for western China as follows:

More than 60 per cent of the rural poor are in the western region ... In building a well-off society in an all-round way, the focal point is in the western region, and the difficult point is there too, especially in the vast rural areas of the west ...

Viewed from the country as a whole, 80 per cent of the soil erosion is in the western region, more than 90 per cent of newly added areas of

desertification every year is also in the region, and the sources of the major rivers are there too ... Stepping up the protection and improvement of the ecological environment in the region has a direct bearing on ensuring the ecological safety of the country and bringing about sustainable economic and social development nationwide.

... Strengthening the protection and improvement of the ecological environment is an important task in the large-scale development of the western region. It is necessary to carry out in real earnest such major ecological projects as those for returning farmland to forests, restoring grazing areas to grasslands, protecting natural forests, and preventing and controlling the sources of dust storms and desertification ... it is essential to strengthen inspection, to check and accept the implementation of such policies, and to strictly follow the standards set by the state.⁷

Environmental projects in western China are justified by invoking a scientific logic that interprets the territory as degraded. This complements a broader value coding embedded in state development discourse of the peoples of the west as underdeveloped, impoverished and a potential threat to social stability. The west as a region is thus seen as threatening the national body, both ecologically and politically. Only through simultaneous improvement of the quality of the peoples of the west – not coincidentally home to its pastoralists and minorities – as well as their land, can the threat be removed. This is similar to what Goldman calls ‘eco-governmentality’ in reference to the World Bank and the development of new hydro-power plants in Laos:

Confronted with what Foucault called the ‘problem of government,’ unevenly transnationalized state and non-state actors have sought to ‘improve’ conditions of nature and populations by introducing new cultural/scientific logics for interpreting qualities of a state’s territory. In doing so, a hegemonic discourse of ecological difference rooted in neoliberal market ideology emerges, defining some ‘qualities of territory’ as degraded, and others as necessary instruments for the improvement of populations, states, and natures. (Goldman 2004: 167)

In this framework, the ‘problem of government’ can be thought of as ‘what authorities want to happen, in relation to what problems and objectives, and through what tactics’; and the application of this framework to nature and resource management has been called ‘green governmentality’ (or ‘eco-governmentality’) (Rose 1999: 21 cited in Watts 2003: 14). Goldman notes that there are several important effects of the ‘greening’ of the World Bank through tools such as mandatory environmental impact assessments, social assessments and green cost-benefit analyses. These tools produce and favour particular types of knowledge and ‘implicitly and explicitly assign values to groups of people and parcels of the environment’ (Goldman 2004: 183). This in turn makes local people visible and transnationally accountable for the environmental effects of their behaviour, while simultaneously enabling other large development projects (in Goldman’s case, a large dam). Discourses of environmentally sustainable development focus their

‘investigative lens on rural peoples and environments in which they inevitably find degradation, mismanagement, poverty and backwardness’ which must then be fixed through new codes of behaviour that are mapped onto particular units of space (ibid.: 183). In this way ‘environmentally sustainable development’ becomes a new technology of government.

Similarly, China’s suite of new environmental projects seeks to stabilise the ecology of the western regions in order to protect the much greater wealth generated in the east through articulations with global capital. The projects also ratchet up the Chinese state’s discourse of its commitment to environmental protection and sustainable development, which in turn helps to signal China’s emergence on the world-stage as a modern, fully-fledged member of the global community. At the same time, they explicitly link the governing of nature with the ‘improvement’ of people. This is clear, for example, in the following statement about the benefits of implementing *tuimu huancao* by the government of Sichuan’s Ganzi TAP:

The implementation of *tuimu huancao* ... has been of great importance for gradually causing the grassland ecosystems of the entire prefecture to enter into a positive circle, improving the environment for the development and livelihoods of the pastoralists, advancing the development of the ethnic economy, protecting the stability of the ethnic region, changing the traditional and backwards ideas of the pastoralists, and constructing a new pastoral region with the coordinated development of material civilization, spiritual civilization and ecological civilization ...⁸

Discourses of Grassland Degradation and Territorialisation

Tuimu huancao has to be understood in the contexts of the drive to develop western China, state-led ecological construction schemes focused on multiple resources, and China’s engagement with economic globalisation. At the same time, however, the rationales commonly given for *tuimu huancao* are also based on older discourses of range degradation that have been circulating since the decollectivisation of livestock in the early 1980s. A common element in this degradation discourse is the frequent invocation of dire statistics such as the following: ‘more than 90 per cent [of the country’s grasslands] are degraded to various degrees, and each year the degraded area increases by 30 million *mu*’⁹ (see Economy 2004: 65). This in turn is almost always blamed on ‘over-use of grasslands, irresponsible cultivation, and long-standing overgrazing’.¹⁰

A large body of research has addressed the political uses of value-laden terms such as ‘degradation’ and shows that the ‘received wisdom’ of conventional environmental narratives often does not stand up to empirical evidence about environmental processes and conditions in specific places (e.g. Blaikie 1985, Watts 1987, Turner 1993, Fairhead and Leach 1996, Leach and Mearns 1996,

Williams 2002). In fact, there is a great deal of controversy over Chinese statistics about ‘grassland degradation’, not to mention livestock numbers (Goldstein 1996). Although there is no doubt about localised overgrazing, the more dramatic and sweeping claims of generalised degradation (e.g. ‘90 per cent of all grasslands’) are based on very meagre evidence at best (Goldstein et al. 1990, Miller 2000). Nevertheless, these claims continue to circulate and do the political work of motivating various programmes to rearrange the livelihoods of herders. The framing of the problem leads to proposed solutions such as the following, in a recent statement about the future of animal husbandry on the Tibetan Plateau:

many high-elevation areas are not conducive to nomadic animal husbandry due to high seasonal variability in the availability of fodder and water and longer and longer distances for migration ... How to put scientific mobile husbandry into practice? Possible solutions require the following: first, make nomadic people accept improved breeds of cattle and sheep to reduce the number of animals and relax the pressure of the migratory system on the region’s ecology. Second, improve the grassland scientifically and establish settlements to ensure a sedentary life for nomads. (Wu and Wen 2002: 281)

Another frequently advocated solution is to encourage herders to increase off-take rates and sell more of their improved breeds of livestock on the market. Thus, the *People’s Daily* reports that a necessary step for Tibet’s development is for ‘herdsmen [to be] ushered in the market economy’, a measure that will ‘eventually facilitate the development of China’s west’.¹¹ Taken together, these various pronouncements suggest a logic which assumes first, that rangelands across China are rapidly degrading because herders have overgrazed their grasslands beyond carrying capacity, and second, that the solutions to both environmental and livelihood problems are the package of science, sedentarisation and the market.

Since the 1980s, a major element of grassland improvement programmes across China’s pastoral areas has been the extension of the Household Responsibility System, which allocates long-term use rights of farmland to individual households, to pastoral areas. This is often done through the use-rights privatisation and fencing of winter pastures to individual households, as well as use-rights privatisation of summer pastures (though this has been far less widely implemented). These have often been implemented in conjunction with a package of improvements referred to as *sipeitao*, or ‘four that form a complete set’: fencing of twenty to thirty hectares of the most productive rangeland for grazing during the late winter and spring; construction of barns for livestock; construction of homes for nomads at the winter pasturage site; and planting and fencing of small plots of annual forage for hay around the winter settlements (Williams 1996, Wu and Richard 1999, Miller 2000).

Some elements of *tuimu huancao* are simply continuations of these older policies under a new name. For example, according to a notice sent by the Ministry of Agriculture to the Animal Husbandry Bureaux of eight western

provinces in April 2005, one of the results of implementing *tuimu huancao* should be ‘a further step in completing the grassland allocation to individual households’.¹² The same document goes on to note that other elements of *tuimu huancao* include improved technical support, improved livestock breeds, adjusting the structure of herds, increasing the off-take rate, building livestock corrals and fencing of various kinds. Despite questions about the appropriateness of the carrying capacity concept in at least some of the ecosystems covered by *tuimu huancao* (Miller 2000), *tuimu huancao*, like *sipeitao*, is based on the principle of reducing grazing to meet a fixed and calculable carrying capacity. Also mentioned as part of provincial reports on *tuimu huancao* are sowing perennial grass seeds and use of fertiliser to re-plant grass on severely degraded areas.¹³ Finally, the elimination of ‘pest’ species, such as the plateau pika (*Ochotona curzoniae*), which is believed to compete with livestock for forage and damage grassland, is also included in *tuimu huancao*. This is the case despite recent arguments that the pika is a keystone species important for biodiversity, and that it may be a symptom, rather than a cause, of rangeland degradation (Smith and Foggin 1999).

From a more theoretical perspective, *tuimu huancao* also continues previous *sipeitao* rangeland projects through its extension of state control over territory. Vandergeest and Peluso (1995) call this internal territorialisation, a process within a state’s borders which is ‘about excluding or including people within particular geographic boundaries, and about controlling what people do and their access to natural resources within those boundaries’ (388). Processes such as land use zoning and the creation of boundaries demarcating administrative entities such as national parks and state forests, extend state power by establishing greater control over both the resources and the people who use them. Functional mapping of land according to scientific criteria such as soil type, slope and vegetation deepens territorialisation by becoming the basis for new rules prohibiting or prescribing certain activities within the new zones (ibid.: 408).

The grasslands of China have already been territorialised by the state through processes of boundary-making, collectivisation and more recently, the push to privatize bounded and demarcated pastures to households. The programme of *tuimu huancao* deepens this process through its new and more extensive zoning of the grasslands into zones where grazing is to be completely banned; zones where it is to be banned for three to ten years; and zones where rotational grazing or seasonal bans are to be implemented. Not only do these designations form the basis of new rules about land use, but they are also to be carefully mapped and recorded. According to the Ministry of Agriculture’s recent set of ‘suggestions’ to the provinces,¹⁴ the work of zoning the grasslands into these three types of allowable uses ‘should be marked with maps as well as text, scientifically, rationally, and with complete information ... the project implementation must be carried out at every village, every household, on every single piece of grassland. The project areas should be measured, using GPS, with the latitude and longitude

of each implementation point measured, and entered into a database'. Whether the funding and personnel are actually available to take such measurements and construct such databases are doubtful, but the stated goals of the programme certainly suggest a higher degree of territorialisation.

What is New about *Tuimu Huancao*?

Thus far I have argued that *tuimu huancao* is characterised by a number of continuities with both cropland SLCP and older *sipeitao* rangeland policies of household pasture privatisation, fencing of winter pastures and the building of livestock shelters and houses. However, there are also major differences, particularly in the zones where *tuimu huancao* seeks to suspend or permanently ban grazing. The fact that these zones are a major component of *tuimu huancao* points to several contradictions in state discourse. For example, whereas household privatisation and fencing of pasture are meant to stimulate both the entrepreneurial and environmental stewardship spirit of the individual household, a permanent ban on grazing does the opposite, encouraging or forcing herders to leave the land altogether, rather than to take better care of it. Thus, it is difficult to see how the *tuimu huancao* project can be a fulfilment or completion of the state's policy of extending the Household Responsibility System to herders, as the state claims, at least in those zones.

Furthermore, while *sipeitao* included sedentarisation in the form of houses built near winter pastures, *tuimu huancao* builds new houses for herders in newly-built towns – completely off the rangelands. The former seeks to transform a mobile pastoral livelihood into a more settled life on the range. Indeed, because houses were built at winter pastures to which families returned each year, the former programme did not necessarily entail a dramatic change in livelihood practices. However, the latter seeks to transform mobile pastoral livelihoods to sedentary, town-based lives, where money is to be earned not from livestock but from some other (unspecified) occupation.

The grazing ban component of *tuimu huancao* also distinguishes it from SLCP, which compensates farmers with grain for their labour of planting trees on their own fields. In other words, SLCP tries to put farmers' labour to work in the service of environmental improvement. In contrast, the ban on grazing in 'converting pastures to grasslands' seeks to remove herders' labour from nature entirely, offering monetary compensation to entice herders to settle away from the range. Even in cases where grasses are to be seeded and cultivated, it is not clear that local pastoralists will be the ones employed in the cultivation. In one pilot study in Qinghai, for example, the cultivation of 2,000 ha of perennial grasses and rodent control were contracted out to a weaving factory from an agricultural region in the province; the rationale given was that 'the local people, who depend on pastoralism for a living, lack experience' (Shen et al. 2004: 320).

Implementation of ‘Converting Pastures to Grasslands’

The first small-scale pilot projects for *tuimu huancao* were carried out in Qinghai province in 2000. A number of larger-scale provincial programmes began in 2003. For example, the government claims to have spent 2.8 billion RMB in Inner Mongolia, Xinjiang and Ningxia during two years of pilot studies of grazing bans as well as grass seeding. Grazing is said to be banned on all 2.62 million ha of grassland in Ningxia province, with ‘all of the 2.9 million sheep in Ningxia ... raised in fenced yards in an effort to recuperate grassland’.¹⁵ In July 2002, Inner Mongolia’s Xilin Gol League announced plans to remove 8,000 families, prohibit 10,000 local families from grazing, have 19,000 families cease grazing (presumably for a period of several years) and implement seasonal rotational grazing for 5,000 families, at a total cost of US \$238.8 million, and with a target of restoring 100 million *mu* of grassland.¹⁶

By February 2005, the government claimed that 190 million *mu* (12.7 million ha) of degraded grassland throughout the country had been ‘restored’.¹⁷ Unlike cropland SLCP, implementation of which has been reduced in scale since 2004,¹⁸ *tuimu huancao* is set to see even more rapid expansion over the next five years. In particular, the Ministry of Agriculture is to invest 26 billion RMB (US \$3.1 billion) to treat 1 billion *mu* (67 million ha) of pasture (40 per cent of the total considered degraded) over a five-year period.¹⁹

Responsibility for implementation is to be devolved from the central government to the provinces, and then down to county-level agricultural bureaux for concrete implementation. Implementation is thus likely to vary significantly across counties and provinces. Even policy statements from different provinces differ, for example, in whether or not they mention resettlement and ‘ecological migration’ (*shengtai yimin*) as an important part of *tuimu huancao*. As noted above, Inner Mongolia has announced plans to remove families from the grasslands. In contrast, Sichuan province has also zoned a large area for a permanent ban on grazing, but has not stated an intention to resettle herders. Qinghai province, more than any other, has linked *tuimu huancao* with ‘ecological migration’, and stressed the offering of economic incentives for herders to leave the grasslands.

The following section sketches a few details of *tuimu huancao* implementation in two provinces with significant populations of Tibetan pastoralists: Sichuan and Qinghai. Both are considered part of the ‘five major pastoral areas of China’ (Sichuan, Qinghai, and the Tibet, Xinjiang and Inner Mongolia Autonomous Regions) and are characterised by mobile grazing systems at high altitudes (above 2,500 m for semi-nomadic areas and above 3,500 m for purely nomadic areas). Transhumance patterns are characterised by seasonal vertical migration rather than the horizontal movements that characterise pastoralism on the grassland regions of central Asia (Clarke 1998: 26). Herders have traditionally practised a number of risk-reducing adaptive strategies such as herd dispersion and

diversification (Wu 1997). Thus herders generally have a diverse mix of livestock, including sheep, goats, cows and yaks; composition varies significantly between the wetter and drier areas of the eastern and western parts of the Tibetan plateau. Though varied, Tibetan herders' mobile grazing strategies have been termed 'climatic opportunism' because their local flexibility matches well with ecological heterogeneity and highly localised grass growth (ibid., Miller 1997).

Sichuan Province

Implementation of the Sichuan provincial *tuimu huancao* plan formally began in June 2003, and called for a total of 160 million *mu* of pasture (out of a total of 313 million *mu*, roughly half of the provincial total) to be 'restored to grassland' within five years.²⁰ The bulk of *tuimu huancao* implementation in Sichuan is to be in its major pastoral areas: Ganzi TAP and Aba Tibetan and Qiang Autonomous Prefecture. The total area of the region is 236,000 km², or 41.6 per cent of the provincial total, of which about 58 per cent is grassland. Ganzi TAP alone covers an area of 153,000 km², 31 per cent of the provincial total, but its population of 890,000 is only a bit over ten per cent of the provincial total. In Ganzi, 8.1 million *mu* (540,000 ha) of grassland in a total of eight counties are slated for *tuimu huancao* implementation. According to prefectural officials, grazing will be completely forbidden in those areas of *tuimu huancao* implementation that lie at an altitude of 4,000 m or higher, or which have grass-cover of under 30 per cent. (In contrast, in Aba, the criteria used for the complete ban are an altitude of 4,500 m or above, or grass cover of under 50 per cent.²¹) The complete ban on grazing is slated to last for eight years, whereas zones for 'resting' the grasslands are to be banned for three to five years. The investment, a total of 160 million RMB (US \$19.5 million USD), is to be spent on infrastructure (fencing) as well as grain to feed livestock in areas where they are no longer allowed to graze (see Table 1).

Although winter-spring pastures were to have been fenced beginning in the 1980s, in fact much of the rangeland in Ganzi remains unfenced. Thus, in many ways, *tuimu huancao* in Ganzi is a continuation of earlier enclosure projects. Resettlement is not discussed in documents by personnel in the prefectural Animal Husbandry Department or in government reports, yet it is clear that if grazing is indeed to be banned on more than 286,000 ha of land, and if the project hopes to reduce rather than greatly increase grazing pressure on the remaining pastures, then some resettlement is inevitable, and indeed has begun in some pastoral areas of the prefecture.

Subsidy targets for the province are supposed to be 20 RMB per *mu*, with 14 RMB (70 per cent) contributed by the central government and the rest coming from matching local funds, but costs for artificial cultivation (seeding) of grasses, fodder cultivation, improved breeds and building of corrals are to 'mainly come from local governments and individual contributions'.²² Despite the promised subsidies, in other words, the government expects individual pastoralists to contribute significant financial resources to this project of ecological restoration.

Table 1: *Ganzi Prefecture Report, 2004*

County	Implementation Area (1,000 ha)	Yearly Grain Subsidy (in 10,000 kg)	Grazing		Number of Pastures in which Policy is being Implemented (Total includes Grazing Banned and Partial Grazing)	T	V	H	P
			Total	Rotational grazing					
Kangding	50	23.3	26.7	123.8	80	40	2,952	13,374	
Ganzi	46.6	23.3	23.3	120.4	76	26	906	5,272	
Batang²⁴	43.3	20	23.3	106.65	79	22	2,032	10,292	
Serta	66.7	36.7	30	182.3	184	22	2,552	10,091	
Shiqu (Sershul)	133.3	73.3	60	364.6	84	43	2,684	13,198	
Peyul	66.7	36.7	30	182.3	165	24	1,751	9,292	
Litang	66.7	36.7	30	182.3	121	50	2,454	11,920	
Derge	66.7	36.7	30	182.3	56	27	2,995	13,729	
Totals	540	286.7	253.3	1444.7	845	350	18,326	86,168	

Qinghai Province

The 33 million ha of grassland in Qinghai province account for about 54 per cent of its total land area. Its roughly 800,000 Tibetan and Mongolian herders make up just under one fifth of the total population, but are spread out over a much larger share of its area.²³ Qinghai province was the site of the earliest pilot project of *tuimu huancao* and appears to be pursuing project implementation, including resettlement through ‘ecological migration’, much more vigorously than other areas. This is not surprising given that the headwaters of both the Yangtze and Yellow Rivers – the original trigger for national attention to the ecology of China’s west – are both found in Qinghai, in Golog and Yushu Tibetan Autonomous Prefectures (TAPs).

One of the two early pilot projects took place in 2000, in Darlag County, Golog TAP. According to a 2001 study conducted by a Task Force, Darlag County was an especially relevant site because over 70 per cent of the county’s grassland was degraded, and 16 per cent of that grassland was so seriously degraded as to be completely unusable (Shen et al. 2004). This ecological situation was purportedly the result of overgrazing, and secondarily, climate change, ‘natural disasters’ and damage by pikas, though as indicated above, much work remains to be done on determining the relative importance of these (and other) factors in causing grassland degradation, and distinguishing causes from effects. Regardless, the environmental situation had deteriorated to the point where many herder households had to spend part or most of the year in neighbouring counties renting pasture to find forage for their herds (ibid., Yeh 2003).

According to the 2001 study, the central government invested 2.5 million RMB in the project, which was used to provide a 50 RMB/*mu* grass seed subsidy. In addition, the county government provided 800,000 RMB, which came from a poverty alleviation fund, and the 181 participating pastoral households were also required to take out poverty alleviation loans in order to cover further costs (Shen et al. 2004: 317–18). The main implementation measures included cultivation of perennial grass (mostly *Elymus nutans*, a wild wheatgrass) on seriously degraded land (on which no grazing was to be allowed for two years); ‘semi-cultivation of perennial grass (scattering of seeds with only slight degree of breaking up and turning of the soil) on 1,330 ha of natural grasslands’; enclosures of both types of areas; and further elimination of ‘rodents’ (e.g. pikas, which are not technically rodents), through poison. Grass cultivation was contracted to an outside company. Ecological migration was not part of the pilot project. Areas on which grazing was banned were small enough not to require resettlement, and during this pilot phase, many herders continued the pattern of migrating to neighbouring counties to rent pasture.

Among the potential problems noted by the study team was the fact that the households were required to take out loans, on the order of 5,000 RMB, which many felt they might be unable to repay. The project also did nothing to provide either alternative employment or training for local residents, and thus may have left households as well as the local government in debt. Further, although the logic

of the programme is based on the principle of grazing only to carrying capacity, enclosures of large parts of the grassland can simply redistribute the livestock to other areas. Shen et al. (2004: 329) found that herders insisted that current livestock numbers are the lowest in history, and thus ‘when asked whether they would be willing to reduce the grassland use rate to below 50 per cent (use half of their rotation for grazing and leave the other half idle for rotation in a given year) in order to improve the environment, 99 per cent of the households surveyed said they would not’.

Despite these early problems, by 2003 the Qinghai *tuimu huancao* programme had been significantly expanded, now with ecological migration as a major component. A recent report on *tuimu huancao* in Qinghai Province suggests that 100 per cent of the grasslands of Golog and Yushu TAPs in Qinghai have been zoned into four types of management regimes: (1) core zone for implementation of *tuimu huancao* on natural grasslands; (2) zone for ecological migration; (3) zone of grazing bans and livestock number reduction; and (4) zone for rotational grazing and seasonal closures (see Table 2). Despite the different names, the first two zones have the same implementation measures: ecological migration and permanent bans of grazing. Primary implementation measures for zone 3 are a reduction in grazing pressure and a ban on grazing for five to ten years; and in

Table 2: *Qinghai Programme Plan*

Type of Programme	Affected People (Households)	Area of Implementation in Million <i>mu</i>	% of Total Grassland in Golog and Yushu
Zone 1	6,515 (1,448)	32.34	11.2
Zone 2	21,164 (4,326)	78.43	28.6
Zone 3	108,800 (21,976)	104	37.9
Zone 4	146,600 (23,659)	60.2	21.9

Notes:

- Zone 1: • sedentarisation and ‘transformation’ (i.e. resettlement, and out of pastoralism) of 6,515 herders, in accordance with the plan set out by the Three Rivers Nature Reserve
- Zone 2: • sedentarisation and transformation of 21,164 herders
• subsidies of feed grain of 2.75 kg /*mu*/year, over five years
- Zone 3: • 50 million *mu* of enclosures
• construction of 20,000 houses (sedentarisation) and 20,000 dual-use sheds
• subsidies of feed grain of 2.75 kg/*mu*/year
• reduction of total animal numbers by 50 per cent
- Zone 4: • 50 million *mu* of enclosures
• Construction of 20,000 houses (sedentarisation) and 20,000 dual-use sheds
• subsidies of feed grain of 0.69 kg *mu*/year, for a total of 34.5 million kg/yr, over five years

zone 4, grazing according to carrying capacity and the implementation of rotational grazing.

Recent news reports from Qinghai proclaim the glowing success of pilot projects for the larger plan, emphasising the resettlement aspect. For example, according to one article that appeared in the *People's Daily* in December 2004, 104 pastoral families from the village of Sangrima in Darlag County, Golog TAP who have 'voluntarily resettled' to the county town, are 'cheerful and happy, and full of hope and confidence about the future'.²⁵ According to the article, the Qinghai provincial government has set up a compensation scheme in which pastoral families who 'voluntarily move as a group' receive a total of 80,000 RMB per household as well as a feed subsidy of 8,000 RMB per household per year for five years; pastoral households who move as individual households receive 40,000 RMB per family of support, as well as a feed subsidy of 6,000 RMB per household per year for five years; and households who voluntarily moved before the August 2003 policy announcement receive a 20,000 RMB settlement fee and 3,000 RMB feed subsidy per year for five years, for the livestock that the families may retain briefly. The article also reports that by November 2004, 33,567 herders (7,366 households) have been resettled, grazing banned on 17 million *mu* of land and grazing pressure reduced by 895,500 sheep units. The fact that these reported numbers of resettled households appear to be higher than those targeted by government reports (above) calls into further question the scope of the resettlement project and the nature of its implementation, as well as the accuracy of reported statistics.

The emphasis on resettlement in Qinghai as compared to Sichuan is almost certainly related to China's downstream concerns about the upper reaches of the Yangtze and Yellow Rivers, and the establishment of the Sanjiangyuan (Source of the Three Rivers) Nature Reserve. Officially the largest nature reserve in China (at 31.8 million ha), it was established in 2000 to protect the sources of the Yangtze, Yellow and Lancangjiang (Mekong) Rivers. As such, the reserve covers most of Golog, Yushu and Haixi prefectures, which constitute about 44 per cent of the total land area of the province.²⁶ The three prefectures have a total of sixteen counties, with a population of 557,200 people, mostly Tibetans. Of this, twenty-five areas, forming 20 per cent of the total park area (6.2 million ha), are to constitute the core zone, which will be closed to grazing and devoted only to biodiversity and wildlife conservation.²⁷ Another 5 million ha are designated as buffer zones. Although the nature reserve was officially established in 2000 and although 900 million US dollars have been pledged by the government, little park-management infrastructure appears to have been put in place to date and few concrete activities have been elaborated beyond ecological migration and *tuimu huancao*.

A large body of literature, a review of which is beyond the scope of this article, has traced the potentially coercive aspects of nature reserves around the world (e.g. Peluso 1993, Neumann 1998). Recognition of the problems in top-down approaches has led over the past decade to the promotion of community-based and

participatory approaches to conservation. However, 'participatory' projects in which parks and pastoral grazing systems are jointly managed are also frequently flawed, particularly in their implementation. Among other limitations, many of these projects continued to be coercive even while maintaining the appearance of a consultative and participatory project (Brosius et al. 1998, Turner 1999b, Neumann 2001). In other cases focusing too much on 'the local' scale and rigidly adhering to models imported from elsewhere 'runs the risk of increasing local ecological and economic vulnerabilities' (Turner 1999a: 643).

In Qinghai, the Snowland Great Rivers Environmental Protection Association was founded in 2002 to work with local herders toward more participatory environmental protection in the reserve and to develop plans for participatory management. Among other things, the NGO plans to 'promote [the nature reserve's] continued betterment and improve its management system. The local community will be encouraged to understand more about the local ecology and traditional eco-culture to implement the protection programmes'.²⁸ Such NGOs are quite new in the Tibetan and Chinese contexts, and offer the potential for improving both environmental conditions and local livelihoods. However, they can only fulfil this potential if they do not clash with state plans to remove the herders from the rangelands entirely. Currently, however, the state's plan, at least on 6.2 million square hectares, appears to be to buy a significant percentage of the herders out, convincing or forcing them to move, rather than to implement any type of participatory and inclusive process.

Conclusions and Future Research Questions

Both SLCP and older grasslands programmes such as *sipeitao* called for technological fixes to land degradation. *Tuimu huancao* declares some land to be suitable for these fixes, but it also designates other land on which only a complete removal of pastoralists can mitigate degradation. Without this project, it is suggested, downstream areas – China's major population centres – will suffer from ecological danger; at the same time, 'underdeveloped' pastoral peoples will continue to pose a threat to national social development. By deepening state control over territory through *tuimu huancao*, however, both types of threats are to be mitigated. In this sense, *tuimu huancao* suggests the emergence of green governmentality. It makes local herders visible and accountable for their purportedly degradation-inducing range practices. Once visible, they are subject to a package of 'improvements' including resettlement. At a broader level, and especially if the Qinghai/Sanjiangyuan nature reserve model is nationally implemented, *tuimu huancao* appears to constitute a dramatic re-making of the pastoral landscape, which is increasingly being zoned into enclosed areas of nature (nature reserves and fencing), separate from enclosed areas of human settlement (towns and cities).

The provincial-level sketches offered here point to the need for on-the-ground fieldwork to investigate the extent to which government reports match implementation and more importantly, local reactions and consequences (intended and unintended) of *tuimu huancao* for pastoral livelihoods. Many questions, particularly regarding implementation, need to be answered.

These questions include the following. Are pastoralists being compensated or subsidised in a timely manner and to the extent to which they have been promised? Evidence to date suggests that money allocated for the programme may not be reaching those who are being resettled. If received, are the household subsidies adequate, especially for herders with large families? What do pastoralists in various locales actually think about enclosures, changes in range conditions and resettlement? Do they work around the intent of these policies and if so, how? For example, does grazing continue on those areas where it is supposed to be banned? Though herders on land on which grazing is to be banned for five to ten years are not allowed to keep their livestock, do some of these herders manage to keep their livestock on the range with their friends or relatives? What sorts of ecological effects will this have? If all resettled herders must sell their livestock, to whom do they sell, and what sorts of prices can they receive for them? Why are some pastoralists being made to take out poverty alleviation loans for an ecological project? Will the new fencing and seeding efforts really restore the grasslands? What logic dictates where the programme is being implemented and where it is not? Is ecological migration really being implemented on the scale suggested? If grazing is banned in some areas and ecological migration is not implemented, how will herders maintain their livelihoods, or alternatively, will grazing pressure actually increase on unenclosed pasture? How 'voluntary' is resettlement? What do newly resettled herders do in the short term, if they are receiving subsidies and have no work? In the longer term, with little education or alternative employment skills, what are the livelihood prospects of the resettled herders? What effects will their presence have on the social relations and climate in the towns in which they are resettled? How likely is it that those resettled for five to ten years will go back to herding? What effects will this have? Experience with other environmental projects such as SLCP, as well as results of early pilot studies of *tuimu huancao*, suggest considerable scepticism in the evaluation of these projects.

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Notes

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4. 'China Seeks New Ways to Tackle Soil Erosion', Xinhua News Agency. Lexis-Nexis, 12 June 2003.
5. 'The Effects of the Grazing Ban in Hebei Province', <http://www.zhb.gov.cn/english/SOE/soechina2003>.
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7. 'Chinese Premier Outlines Priorities for Western Development,' 7 February 2005. *Financial Times Information*.
8. 'Summary of *tuimu huancao*'. (*Tuimu huancao zongshu*) <http://www-ganzi.cn/t/040513zggz>.
9. This is repeated in many places; see for example 'The *tuimu huancao* Programme will be Comprehensively Opened up Next Year, with the Country Investing 26 Billion RMB' (*tuimu huancao gongcheng mingnian quanmian kaizhan guojia touru 260 yi yuan*) (in Chinese) www.china.org.cn/chinese/huanjing/658796.htm.
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17. 'Nearly 8m Hectares of Land Rehabilitated into Forests in West China'. Xinhua News Agency, Beijing, 13 February 2005. BBC Monitoring Asia-Pacific; 'Chinese Premier Outlines Priorities for Western Development,' 7 February 2005. *Financial Times Information*, BBC Monitoring International Reports; both from LexisNexis.
18. Ibid.
19. 'The *tuimu huancao* programme will be comprehensively opened up next year, with the country investing 26 billion RMB' (*tuimu huancao gongcheng mingnian quanmian*

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 22. Ibid.
 23. 'Nomadic Herders Vanishing in China', http://www.tibet.ca/en/wtnarchive/2001/8/1_3.html.
 24. A report from Batang county states that the total investment into the project is 13.45 million RMB (roughly US 1.64 million), of which the central government has contributed about 68 per cent, the rest coming from local matching funds.
 25. '7300 Nomadic Households in Qinghai Voluntarily Implement *tuimu huancao* and Settle Down in Towns' (*Qinghai 7300 hu mumin ziyuan tuimu huancao dingju chengzhen*). http://www.agri.gov.cn/gndt/t20041220_287659.htm.
 26. Note that some reports state the total area as 31.8 million ha, while others report 15.23 million ha. For the former, see for example 'Sanjiangyuan Natural Reserve becomes Important Wetland of the World' *People's Daily Online*. 16 May 2005. http://english.people.com.cn/200505/16/eng20050516_185261.html; http://english.people.com.cn/data/China_in_brief/Environmental_Protection/Nature%20Reserves.html; and 'China Sets up Largest, Highest Nature Reserve'. Xinhua News Agency, 19 August 2000, <http://forests.org/archive/asia/chsetup.htm>. For the latter, see *Sanjiangyuan Guojiaji Ziran baohuqu* (Sanjiangyuan National Level Nature Reserve), Qinghai Sanjiangyuan National Level Nature Reserve Management Bureau, brochure (Chinese and Tibetan). The 31.8 million ha figure appears more frequently, and is used here. In any case, there is considerable confusion about the reserve, and even some NGOs working in the reserve have not been given information on where exactly the core areas are.
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