

# **Tenure and Management Arrangements for China's Grassland Resources: Fieldwork Findings and Legal and Policy Recommendations**





# Tenure and Management Arrangements for China's Grassland Resources: Fieldwork Findings and Legal and Policy Recommendations

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## Introduction

About two-thirds of China's population resides in rural areas, relying on collectively owned rural land as a primary source of both current income and long-term security. The institutional arrangements under which rights to such land are held largely determine both the economic viability of rural households and the long-term sustainability of the land. The first stage of China's recent rural land system reforms involved the transition from collective ownership and management of rural land to a system under which the rights to use and manage collectively owned rural land were contracted directly to households. Although the earliest steps of the Household Responsibility System reforms involved only arable land, grassland resources would soon follow. For nearly 20 years, institutionalisation of the Household Responsibility System reforms has remained the underlying principle of Chinese rural land laws and policies.

In October, 1998, the 'Decision of the Central Committee of the Chinese Communist Party on Several Major Issues in Agriculture and Rural Work (Third Plenary Session Decision),' issued following the Third Plenary Session of the 15<sup>th</sup> Central Committee of the Communist Party of China, renewed the central government's commitment to the Household Responsibility System. The Third Plenary Session Decision called for the implementation of 'long-term protected use rights' to rural land and the drafting of additional legislation to protect those rights. The process of drafting new legislation governing rural land rights has already begun, and two pieces of legislation currently in the drafting process – a new Rural Land Contracting Law and a new Property Law – have the potential for great impact on China's rural land system, including non-arable land tenure arrangements.

With respect to arable land, both China's experience with the Household Responsibility System and the weight of comparative experience strongly support the proposition that strengthening households' individual use rights to such land will further the central government's underlying policy goals: providing incentives for long-term investments in land, increasing agricultural productivity, encouraging long-term land stewardship, developing a market for use rights to arable land, and strengthening social and political stability in rural areas. However, the specific policy goals related to non-arable land in China may differ substantially from those for arable land. Due to the nature of the resources themselves – and for geographic, historical, and cultural reasons – non-arable land resources have important poverty alleviation, environmental protection, and community support functions that may be emphasised to a greater degree than on arable land. Further, the evidence concerning the benefits of individualised tenure on grassland is more ambiguous. Although individualised

household tenure on non-arable land has been successfully implemented in some areas of China, in other areas, severe degradation or mining of resources has occurred. At the same time, a growing body of research both from within China and from around the world has pointed to the complexity of factors that must be taken into account in developing appropriate land tenure and management regimes for non-arable land, and has provided numerous successful examples of common property management approaches for grassland.

The ongoing process of legislative drafting brings rural land tenure issues to the forefront in China, and raises the important question of whether the same tenure arrangements that have been successfully applied to China's arable land are also the most appropriate for its grassland resources. This paper aims to help inform the legislative drafting process by providing evidence of a variety of successful approaches to grassland tenure, in China and elsewhere, and by offering a series of legislative and policy recommendations intended to facilitate the institutionalisation of such tenure arrangements within the specific context of rural China.

For the reasons stated above, and the two aspects discussed below, the Yunnan Center for Community Development Studies (CDS) and the Rural Development Institute (RDI) undertook the cooperative research project described in this paper.

One reason for this is that, in the course of prior interactions between CDS and RDI, we discovered that the research of our two institutes on China's rural land system includes many complementary aspects. The first is the focal point of the research. CDS has focused on non-arable land, and RDI has focused primarily on arable land, with some work on grassland tenure. The second complementary point is the direction of our respective work. CDS focuses mainly on the micro-level impacts of property rights systems, while RDI focuses on the direction of legal and policy system reforms. The third point is our respective research methodologies. CDS employs both rapid rural appraisal (RRA) and participatory rural appraisal, along with some small-scale questionnaire surveys, and RDI employs both rapid rural appraisal and large-scale questionnaire surveys. The fourth is the academic backgrounds of our researchers. CDS is an organisation comprised of researchers from a variety of disciplines, while RDI researchers are all trained in law.

A second reason for this partnership is a hypothesis, arrived at from previous field research, that says that local officials, as well as the vast majority of community members, believe that previous property rights systems governing non-arable land developed from and adopted – to the point of indiscriminately copying – the property rights system employed on arable land. However, whether this presumption reflected the actual situation, and any related consequences, remained unknown.

The first section of this paper, in addition to presenting an overview of existing land tenure arrangements governing grassland in China, also provides examples of common property resource management on grassland from the United States, Canada, Australia, and Mongolia. The next section presents a series of village case studies encountered during 14 days of rural fieldwork conducted by the authors, researchers from the Center for Community Development Studies (CDS) and the Rural Development Institute (RDI). This fieldwork was conducted in Zhongdian counties of Yunnan Province during August and September of 2001. The last section offers a series of preliminary conclusions and recommendations, developed from our fieldwork findings and a review of comparative research.

## Grassland tenure systems: Chinese approaches and international comparative examples

### *Chinese approaches*

Several characteristics of China's grassland resources have an important bearing on tenure and management arrangements. First, China's grassland area is large, comprising nearly 40% of its land area. Second, China's grasslands are primarily located in its northern and western provinces. This is significant both because poverty rates in provinces with relatively large grassland areas remain well above national averages (Mearns 2000) and because these provinces are home to relatively high ethnic minority populations (Mearns 2000). Third, China's grasslands incorporate a wide geographical and ecological diversity, from alpine meadows on the Tibet-Qinghai Plateau at an altitude of over 4,000 meters above sea level, to steppe and desert in arid regions such as Xinjiang (with less than 150 mm of annual precipitation), and hilly grassland in the sub-tropical zone of Yunnan Province or the semi-arid Loess Plateau (Ho 2001). Finally, and most importantly, it is estimated that 90% of China's grassland has been degraded to some degree, including 42% that is 'moderately or seriously degraded' (SDPC 1996, SEPA 1998). Furthermore, many officials and researchers consider land tenure and management arrangements to be a significant contributing factor to this ongoing degradation (Banks 2001, Li and Duo 1995, Longworth 1993, NRC 1992, Tuoman 1993, Wang 1993). As a result, grassland tenure and management arrangements in China should strive to balance a number of often competing objectives, including poverty alleviation, environmental protection, and continuation of indigenous resource management strategies.

Current grassland tenure policies in China were introduced in the early 1980s with the establishment of the Pastureland Contracting System (PCS). Parallel to the Household Responsibility System that had been implemented on arable land beginning in the late 1970s, the PCS adopted the household as the primary unit of contracting for grassland. The underlying principles of the PCS were first embodied in national legislation by the 1985 PRC Grassland Law, which remains the only national law governing grassland tenure and management. Under the Law, pastureland remains under the ownership of the state or collective unit and is contracted to households for 'long-term' use (PRC Grassland Law Article 4). The Law itself does not provide much insight into the question of pasture management, but related policies envisioned that allocation to individual households would be followed by the assignment of carrying capacities, and finally that a system of incentives and sanctions would be introduced to enforce compliance with the assessed stocking limits (Mearns 2000).

No comprehensive surveys addressing the extent and nature of implementation of central laws and policies concerning grassland have been published to date. Published figures for the percentage of contracted rangeland include 95% in Xinjiang, 90% in Gansu, 80% in Sichuan, and 80% in Inner Mongolia (Banks and Sheehy 2000, Yutang Li 1994). However, strict implementation of the policy of individualisation and enclosure of grazing land has actually been achieved in only a minority of China's grazing regions. In contrast to the uniformity that is embodied in national laws and policies, this research indicates that local approaches to grassland tenure and management remain in effect in much of China.

A review of relevant research indicates that where implementation of individual grassland allocation with enclosure has occurred, several important impacts on grazing communities have been observed. Individualised pastures make it extremely difficult, if not impossible, for communities to adopt approaches that allow increased mobility and flexibility of access to grazing resources, which may be essential to the survival of herds and to herders' livelihoods during periods of risk. Particularly in drier areas, this lack of mobility and flexibility has resulted in considerable harm to the long-term sustainability of grazing. Allocation and enclosure of grazing lands has also been shown to lead to increased conflicts within grazing communities (Williams 1996).

Research on grassland in China has emphasised the importance of geographical, historical, and political contexts in establishing tenure and management regimes that are productive, equitable, and sustainable (Mearns 2000). Specific factors that must be considered in establishing an appropriate tenure regime for grassland may include the following: (1) resource predictability or ecological dynamics as a measure of the need for mobility and flexibility in resource use, assuming limited external inputs; (2) policy context – the extent to which mobility is permitted or facilitated, where resource constraints demand it; (3) livelihood diversification – the availability (or lack thereof) of supplementary or alternative livelihood sources to at least compensate for any loss of livelihood from livestock production; and (4) socioeconomic differentiation – a measure of inequality in incomes and/or asset holdings, including livestock, among households within and between pastoral communities (Mearns 1999). The research concludes that '...it is essential that land tenure options be tailored to local conditions. Laws that mandate one option or another, rather than a permissive legal framework that provides for a range of adaptive options under different circumstances, are likely to work to the disadvantage of some areas of each country' (Mearns 2000).

Field research on grassland tenure in Altay Prefecture in northern Xinjiang Province found that existing group tenure arrangements provided important benefits to local herding households: including facilitating the realisation of economies of scale with respect to herding labour, affording equitable household access to resources, and providing insurance against economic risk (Banks 2001). The field research concluded that these important features of grassland tenure stem not from national or local policies – and in fact, run contrary to national and provincial policies mandating individualised tenure – but instead from the characteristics of grassland resource endowments, particularly their expansiveness and seasonal pattern of utilisation (Banks 2001).

### ***International comparative examples***

There are two main methods of pastureland management, each with its own country-specific variations. Under the common property model, property is used in common by a group, and the group itself conducts regulation. Early pastureland systems throughout the world centred on common property management, and many areas of Africa and Asia continue to rely on this approach. Under a second approach, which is utilised in most western countries, grazing land is privately owned or is leased by individual ranchers from the government, and regulation is conducted by government agencies. Within each of these broad management styles, there are multiple variations, some of which are explored in the individual country examples.

### Communal grassland management in Mongolia

In Mongolia, individual rights to pastureland have never existed, and privatisation of pasture remains unconstitutional (Fernandez-Gimenez 1999). Rather, there has existed a complex of overlapping or nested tenures to a variety of resources, vested in groups of different sizes and social functions and governed by an array of formal and informal institutions. During thirty years of socialist government (1960-1990), pasture use was regulated by the state, through the mechanism of the 'negdel', or collective. To some degree, customary patterns of use and tenure guided negdel decisions. Since the demise of socialism in Mongolia (1990), pasture use has not been formally controlled. The collectives that once allocated pastures and campsites and directed seasonal movement patterns were dismantled in 1992, and state-owned livestock was privatised. Although some customary forms of social organisation quickly re-emerged – notably the traditional residential unit of the herding camp, or 'khot ail' – institutions to govern pasture use have not re-evolved in most places.

In 1994, the Mongolian 'Ikh Khural' (national legislature) passed the Land Law, which contained provisions for the regulation and management of pastureland, as well as the leasing of campsites and pasture (Mearns and Swift 1995). The Law supports the principle that all pastureland should remain public, or be held 'in common', and expressly recommends that grazing follow traditional seasonal movements between pastures (Mongolian Land Law of 1994, Article 51). The Law further provides for emergency reserve pastures, and movement of herders between provinces in the case of major climatic disaster. Management is decentralised, as the key government decision-maker in the new law is the 'bag', the lowest level in the territorial administration. These local decision makers have the authority to take measures to protect pastures, including suspending the use of any pasture that has been overgrazed and whose carrying capacity has been exceeded, or limiting the number of livestock (Mongolian Land Law, Article 51).

### Exclusive use systems in the United States, Canada, and Australia

The other primary method of managing pastureland is to divide public land into individual parcels. One common approach – followed by governments in the United States, Canada, and Australia – is to lease government-owned grazing lands to individual herders. In the United States, the federal government owns public domain land that is made available for grazing. The majority of this land is managed by the Department of Interior's Bureau of Land Management (BLM), which allocates grazing permits to ranchers for a fee based on the number of animal unit months, representing the amount of feed required to feed the equivalent of one cow for one month, allowed for the particular piece of land (Olinger 1998). A similar system exists in Canada, where provincial laws in the Great Plains provinces of Manitoba, Alberta, and Saskatchewan allow for the lease of government lands to private individuals and grazing associations for a set fee. One such province, Alberta, sets the rent for such leases based on the grazing capacity of the land, the average weight gain of the cattle, and the price of beef (Alberta Public Lands Act, Chapter P-30 Part 4 Section 107).

In Australia, a high percentage of arid and semi-arid grazing land is owned by the government and held under leasehold title by private ranchers (Boer and Hannam 1992). Lease fees are required, and leases are made subject to maximum stocking rates, as well as maintenance and improvement requirements. The leases are long-term in nature and rarely revert back to the government, meaning that the leaseholder

is solely accountable for the condition of the land. Land degradation has been a severe problem in Australia, with approximately 1.5 million square kilometres of pastureland classified as severely degraded.

Each of these exclusive use systems is intended to prevent overgrazing by evaluating the quality of the land to be leased and determining maximum stocking levels based on that measure. In theory, exclusive use also allows herders to maximise the potential of his or her land through improvements on the land, such as digging wells for watering animals and reseeding pastures with beneficial varieties of plants. Herders operating under exclusive use regimes, however, are also exposed to significant risks, as they are unable to adapt to changing weather conditions and may have difficulty determining the optimal stocking level of the land – thus risking overgrazing, deterioration of range quality, and potentially the total loss of income. Exclusive use systems also require substantial investments in oversight and expertise, and the experiences of the United States, Canada, and Australia all indicate that effective implementation is extremely difficult.

### Communal tenure versus exclusive use – several factors in setting policy

A number of general factors must be accounted for in determining whether communal tenure or exclusive use systems should be applied to grassland. These factors do not allow a definitive conclusion as to whether one particular tenure regime is superior to another, but they do lend considerable support to the notion that communal tenure arrangements may be more appropriate where certain circumstances are present. The following five attributes have been identified that might make a certain piece of grazing land more suitable for communal land tenure: (1) the value of production per unit of land is low; (2) the frequency or dependability of use or yield is low; (3) the possibility of improvement or intensification is low; (4) a large territory is needed for herding; and (5) relatively large groups are required for capital-investment activities (Ostrom 1991). Some type of common property system is usually most viable for such settings (Giovarelli and Hanstad 1999).

However, in determining what type of use regime is appropriate for pasture, one must be careful to distinguish between different types of pasture. For small-scale pasture, such as land around livestock shelters and pasture or hay fields cultivated by individual households, individualised private ownership or individualised use rights may be appropriate. However, for large-scale, uncultivated pastures used by a larger group of persons, some type of group or state ownership is likely to be appropriate.

While the touted benefit of privatisation (the elimination of overgrazing) has been and could continue to be achieved by common property systems, privatisation of grasslands itself has several drawbacks. First, establishing and updating a private property system is expensive. The costs of infrastructure, such as fencing, as well as administrative costs associated with enforcing grazing regulations, are high. To be feasible, privatisation must yield economic returns exceeding the administrative and material costs involved. Second, even if cost was not prohibitive, management flexibility, vital for effective management of a highly variable resource, is lost. Under a relatively rigid private property system, it is much more difficult for users to collaborate to overcome the effects of natural disasters, such as droughts. Also, the vast size of many grasslands make enforcement of grazing regulations by regulatory personnel very difficult. A more effective method is to have herders and farmers enforce grazing rules themselves.

## Fieldwork findings

### *Fieldwork methodology*

Researchers from CDS and RDI conducted fieldwork in Zhongdian County, Diqing Prefecture, Yunnan Province in August and September, 2001. The research team was briefed by county (or district) agricultural and land bureau personnel and by county animal husbandry officials. Based on consultation with county (or district) officials, individual villages were selected as fieldwork sites. Selection criteria included ethnic composition; composition and nature of land resources; presence of unique tenure arrangements; and importance of agriculture and herding to the village economy.

In each village, the CDS-RDI research team employed rapid rural appraisal (RRA) and participatory rural appraisal (PRA) as primary techniques during the course of interviews. When applying RRA and PRA, we took into account the following factors:

- asking for officials' opinions as well as listening to farmers' voices in the community, because officials from county or township governments accompanied us in the fieldwork;
- interviewing both village cadres and general farmers;
- conducting group discussions, as well as individual household interviews;
- paying attention to opinions from both male and female villagers.

We also employed a number of RRA and PRA visual tools such as resource mapping, community mapping, quarter calendar, big events, and points ordering. By using these tools, cadres and farmers are engaged in an active interview process, rather than being passive respondents to a questionnaire. Instead of adhering to a predetermined set of questions, interviewers are free to pursue items of interest discovered during the course of the interview. In addition, a series of interviewing tools are employed to encourage participation by interviewees. We asked cadres to prepare resource maps of their villages indicating the location, type, area, and use patterns of land resources. In order to obtain a sense of the land tenure changes that have occurred in each village, we also asked both cadres and farmers to describe the tenure arrangements on each type of village land since decollectivisation occurred in their village.

During the course of interviews, the specific composition of the research team varied from village to village. In some villages, researchers divided into two separate teams, with one team interviewing village cadres (including former cadres) while the other team interviewed farmers. In other villages, the entire research team conducted cadre interviews together, and then divided into two teams to interview farmers. Farmer interviews can be divided into two categories – group interviews and individual interviews. Where group interviews were possible, we randomly identified groups of men and women from the village and interviewed them separately in order to understand a range of attitudes and opinions towards land. Where, due to time constraints or farmers' involvement in harvesting, group interviews were not possible, we randomly identified individual farmers as interviewees. The research team spent one day in each interview village.

We emphasise local innovations in grassland tenure arrangements observed during fieldwork, and the attitudes and preferences of farmers and local officials with respect to these innovations. The emphasis on common property management arrangements presented in the village case studies below is not meant to invalidate individualised

household tenure as a policy option, but rather to illustrate the set of local considerations that has led to common property management, and its effect on grassland resources. In addition, we summarise important differences between arable land and non-arable land as expressed by farmers and cadres themselves.

### ***Findings***

Zhongdian County of Diqing, Tibet Autonomous Prefecture is a poor county with the largest landmass and area of grassland in Yunnan Province. The three villages in Zhongdian in which we conducted fieldwork interviews – Heping, Jidi, and Jiulong – have several common characteristics with respect to resource management. First, village land holdings (arable and non-arable) are vast compared to most areas of China. Second, agricultural productivity in the villages is limited, both as a result of small arable land areas (relative to more expansive grassland areas) and due to the fact that villages are located at altitudes of over 3000m. The main crops are potatoes and barley; the latter is grown both for household consumption and as a source of animal feed. Third, all three villages are ethnic minority villages, rather than Han Chinese villages. Fourth, all villages distinguish between ‘collective pasture’, located relatively close to the village, and more distant ‘alpine pasture’. In two of the three villages – Heping and Jidi – ‘household pastures’ have also been created and allocated to households. Finally, common property management has traditionally been, and still remains, the tenure arrangement governing the vast majority of grassland in each of the three villages.

All alpine pastures in the three villages remain under common property management regimes, as do most of the collective pastures. Only the small household pastures present in Heping and Jidi are managed exclusively by individual households. However, we observed one important difference among the three villages with respect to grassland tenure arrangements. Two of the three villages – Jiulong and Jidi – have retained traditional common property regimes on all of their collective pastures, while Heping has enclosed a portion of its collective pastures and allocated individually-delineated rights to pasture within the enclosed area to village households for the production of feed grasses. The introduction of these ‘man-made’ collective pastures has been accomplished in recent years as part of the government’s feed grass reform project. In addition to providing an overview of grassland tenure in the three villages, our analysis centres on their differing approaches to management of collective pasture. We first discuss natural pastures in Jidi and Jiulong Administrative Villages, and then man-made pastures in Heping Administrative Village.

#### Jidi Administrative Village

Jidi Administrative Village has 464 households and 2,465 rural residents scattered among its 17 natural villages. Land resources are abundant, totalling well over 100,000 mu (15 mu of land equals one hectare). Of this amount, arable land accounts for approximately 6,000 mu.

All three types of pastures – household pastures, collective pastures, and alpine pastures – are present in Jidi, with different tenure arrangements employed for each. Household pastures are small plots of land located near family residences that have been allocated to individual households. These enclosed pastures are not used for grazing or sheltering animals, but rather for growing and drying feed grasses. The specific land area for household pastures varies according to village small groups but is typically no more than two or three mu and can be as small as a fraction of one

mu. Household pastures were allocated to farmers in the early 1980s, following implementation of the Household Responsibility System on arable land. Most households have built large wooden scaffolds on their household pastures that are used for grass drying.

Most grazing occurs on collective pastures, which are owned by each of the 17 natural villages. Some collective pastures are managed as common grazing land for households belonging to an individual natural village, while other pastures are managed by several natural villages. Regardless of the scale of common property management, access is granted to members of the defined community. Village cadres reported that boundaries separating the collective pastures of different natural villages or larger communities are clear to farmers, and that these boundaries are enforced against outsiders with a system of fines for encroachment. No limits are imposed on households with respect to the number and kind of animals raised. Village cadres reported that very severe degradation of collective pasture has occurred.

Alpine pastures have traditionally been used by village herders, some of which are in the vicinity of the village, and others of which are located in remote mountains at altitudes of over 5000m. These alpine pastures have been managed under a common property regime for 'generations of generations.' Although the cadre described the alpine pastures as belonging to the administrative village and told us that access is limited to members of the administrative village, it seems more likely that they are subject to use by a much broader group of herders based on traditional herding patterns. This seems likely given both the distance from the village of some of the alpine pastures (the cadre estimated they were as far as 100 km away), and the fact that the administrative village cadre noted that past disputes over alpine pasture had involved herders from as far away as Sichuan Province. The cadre also told us that fewer households have grazed their animals in alpine pastures in recent years, choosing instead to remain in the villages during summer. As a result, he reported that the quality of alpine pastures is excellent, with very little degradation.

In two separate interviews, village herders opposed the idea of individualising all of the village's collective pasture. One herder, a 37-year old male, expressed a concern that individualisation of collective pasture would result in the creation of parcels that were too small for effective management. A woman herder with a total herd of more than 20 yak and yak hybrids told us that animals already have sufficient grass all year. During the months between April and August, she herds her yaks on collective pastureland. Between September and October, she feeds her yaks at home with the grass harvested from her individual household pasture. From November to January, she herds these yaks in alpine pastures. When alpine pastures are covered with snow between January and April, she returns home and feeds the animals with grass hay and barley straw she harvests from her arable land. She emphasised that individualisation of collective pasture would entail an enormous administrative burden, require substantial investments in fence building, and increase disputes among village households, without any commensurate benefits.

#### Jiulong Administrative Village

Due to unforeseen circumstances, we were only able to conduct one interview in Jiulong, with the village elementary school teacher. All other village residents had been organised into a search party to look for a villager who had been missing for

several days, and had therefore left the village. Following is the information we were able to obtain about Jiulong Administrative Village.

Grassland in Jiulong consists of collective pastures and alpine pastures, both of which are managed collectively. Household pasture has never been allocated. Most village households graze their animals in collective pastures from November to February and in alpine pastures from March to October. Collective pastures are open to members of each natural village, while alpine pastures are open to members of the entire administrative village. Only yaks and hybrids are grazed in alpine pastures, with herding typically done by specialised households. Specialised household herders may be residents of the village or outsiders. The farmer we interviewed reported that he and two other households combine to hire a specialised household to manage their herd during the summer months. Herding fees are paid in cash and kind, and the farmer estimated that he would pay approximately 200 RMB\* this year for his five yaks.

The farmer interviewee dismissed the idea of individualisation of alpine pastures as impractical, given both traditional management preferences and current management practices. He also opposed the idea of individualising any collective pastureland on the grounds that it would result in many disputes among village households. However, the farmer did favour individualisation of another type of village land for growing feed grass. Each household within the farmer's natural village has been required to provide two mu of arable land as part of a project to return marginal land cultivated by villagers back to its original grassland use. One mu of the land must be returned to grazing land, depending on location within the village. Compensation in the amount of 300 jin (one jin is equal to 500 grams) of grain has been provided to households to help mitigate the impact of losing the right to cultivate the land for agricultural purposes. The project has only begun this year, so the process of rehabilitation is not yet complete. However, the farmer strongly stated his preference that rights to this grazing land should remain with the households who previously held agricultural land use rights. He distinguished this land from collective pasture on the basis that it has already been under the management of identifiable, individual households for many years.

The farmer told us that degradation of village grazing land has been an increasingly serious problem in recent years. However, he attributed degradation not to collective management, but to failure to establish and enforce stocking limits on the land. Both collective and alpine pastures have been adversely affected by increases in herd sizes in recent years.

#### Man-made pastures in Heping Village

In Heping, household pastures were allocated based on household population as part of the implementation of the Household Responsibility System reforms in 1982. An average allocation was approximately one mu. These parcels have remained under individual household management without readjustment since that time, and in 1999, the village issued land use rights certificates that granted households 30-year use rights to the land. As in Jidi, household plots are used only for growing feed grass, not for grazing.

\* Chinese currency, in 2002 USD 1 = 8.27 RMB

Alpine pastures within the village are accessible to all members of the administrative village. However, recent reforms have changed the nature of use and management of collective pastures in parts of the administrative village. The natural village in which we conducted fieldwork possesses approximately 600 mu of collective pasture, which is used by 33 households. Prior to 1999, all of the collective pasture was managed collectively, with access granted to all members of the natural village. In 1999 however, as part of the government's grassland improvement project, the natural village created a 'man-made' pasture by enclosing approximately 200 mu of collective pasture. Within the enclosed area, plots were allocated to households on a per capita basis and demarcated by digging shallow trenches with a tractor. Each per capita share was approximately one mu in size, with the location of each household's specific plot of man-made pasture determined by drawing lots. Similar to household pastures, the man-made pastures are exclusively for the purpose of growing feed grass, not for grazing animals. Households are permitted to grow whatever types of feed grass they choose within the enclosure. The objective of fencing in this area was to provide individual households with incentives to increase grass production through investments, such as fertiliser, that would not be made by households on collectively managed pasture. The costs related to enclosure – fencing materials, labour, demarcation of plots – amounted to 60,000 RMB and were granted by government funds rather than village revenues.

The remaining 400 mu of collective pasture continues to be managed under a common property regime at the natural village level. Grassland guards are employed by the village to prevent access by herders from neighbouring natural villages, and guards are empowered to assess fines of 0.5 RMB per head for every incursion by non-village cattle onto the grazing land. We were told that violations were rare. Herding labour is also organised on a collective basis. Before 2000, the natural village hired a specialised person to perform the herding work and paid him a salary of 3,000 RMB per season, collected from village households based on the number of animals owned. In recent years, however, village incomes have dropped by an average of 80% as a result of the prohibition on timber harvesting. Therefore, the natural village has adopted a labour-sharing approach to herding, under which each household is required to provide one day of herding labour for every two head of livestock it owns. The natural village cadre and farmers agreed that the previous method involved much lower management costs, freed up labour for non-agricultural employment in the nearby township, and better conserved grassland resources. The drop in village income, however, made the financial cost of continuing this type of management prohibitive.

Cadres and farmers agreed that, thus far, the man-made pastures have been largely successful. They estimated that grass production has been nearly twice as much on the man-made pastures as on natural pastures, and over the past two winters, they have noticed a slight decrease in the number of livestock deaths attributable to a lack of feed during winter months. However, cadres and farmers were also in agreement that it would be impossible to allocate all collective pastures to individual households. Several reasons were cited. First, farmers would not welcome such a drastic change from what has been a longstanding traditional practice. Second, farmers would be unable to cover the costs of enclosure without substantial government subsidies, and farmers and cadres agreed that higher priority uses for such subsidies could be easily found. Third and perhaps most important, even if enclosure were entirely subsidised by the government, farmers lack even the minimal amount of capital necessary to

increase grass production on additional individualised pasture. In fact, we were told that some households are unable to afford inputs for their small plot of existing man-made pasture. Without such investments, the net effect would be to limit each household's livestock mobility to a small area without providing for regenerative investments, with severe degradation the only possible result.

### ***Differences between arable land and non-arable land***

Over the course of our interviews, we asked county officials, village cadres, and farmers to compare land tenure arrangements on arable land with land tenure arrangements on grassland and to describe the characteristics of each type of land that might necessitate different approaches to land tenure. Table 1 summarises their responses.

**Table 1: Comparisons of three land tenure arrangements by farmers, county officials, and village cadres**

Arable Land	Grassland
<ul style="list-style-type: none"> <li>• For most villages and communities in mountain areas, it plays both subsistence and income roles, and thus is a type of social security; in farmers' words, it has a production function</li> <li>• Households with larger populations and less land face more pressure</li> <li>• Households receive annual benefits from labour and other inputs</li> <li>• Harvest rights belong to farmers</li> <li>• Most households attach importance to labour inputs and are able to arrange them rationally</li> <li>• They are located around villages and communities and are easy to manage</li> <li>• Limitations and risks are few; the primary issues are good seed and capability of farm households</li> <li>• The tax burden is low; however, there are many fees</li> </ul>	<ul style="list-style-type: none"> <li>• To some degree, it plays both ecological and production roles; for households, the production function is superior to the ecological function; for the whole community and the government, the ecological function is superior to the production function</li> <li>• Pasture degeneration becomes a problem</li> <li>• Enclosure is one of the important criteria that demarcate individualised holdings, but households generally lack the capital to cover costs of enclosure</li> <li>• Farm households benefit mainly from <u>products</u>, rather than from forage grass itself; therefore, grassland tenure is only one of the factors that affect income, and thus is not valued by villagers</li> <li>• Grassland has traditionally been managed as common property</li> <li>• Allocation of alpine pastures is difficult</li> <li>• Allocation to households will result in disputes</li> <li>• Changes in livestock-raising methods, and reductions in number of livestock, are needed</li> </ul>

## **Conclusions and recommendations**

### ***Conclusions***

The results of our fieldwork in Yunnan Province, as well as a review of the international comparative examples described above, support the following conclusions related to non-arable land tenure arrangements in China.

1. To varying degrees, common property resource management exists on grassland in all of the fieldwork villages – All alpine pasture continues to be managed as common property, and experiments with individualisation of a portion of collective pasture are in very early stages. Only household pasture, which is used for production of feed grasses and not for grazing, has been allocated to all village households on an equal basis in some villages.

2. Both local officials and farmers expressed strong support for common property resource management on some or all of their community's grassland – Where common property management systems are employed, we found very little support for the idea of individualising grassland resources.
3. In many contexts, cadres and farmers felt that common property management arrangements on grassland have been equally or more successful than household contracting on such land with respect to important policy goals – Farmers universally agreed that household contracting is necessary to provide incentives for agricultural production on arable land. In Zhongdian County, herders dismissed individualisation of alpine pastures as impossible and voiced opposition to the idea of allocating all collective pasture to households on the grounds that it would disrupt traditional management methods and increase inter-household disputes, while not necessarily improving grass quality. In areas where grassland degradation had occurred, interviewees attributed it to overstocking, rather than to problems with common property tenure and management arrangements.
4. Local cadres and farmers told us that property rights regimes for arable land and non-arable land must reflect the unique characteristics of these different resources – Fieldwork interviewees told us that this arises not only from the inherent differences between the two types of resources, but also from the yields and products produced on each type of land. They felt strongly that arable land can be contracted to households and that a term of 30 years is sufficient.
5. Additional field research will be necessary to determine the range of land tenure arrangements currently employed on grassland throughout China, their ability to meet central and local policy objectives, and opportunities for community-based institutionalisation of such arrangements – Effective laws and policies governing grassland must be based on adequate and reliable empirical evidence. Our fieldwork findings clearly illustrate that a 'one-size-fits-all' approach, based on arable land tenure policies, ignores both the unique characteristics of grassland, and the diversity of tenure arrangements that have been adapted to those characteristics. Additional research would be helpful in identifying the most successful of such arrangements and distilling a set of appropriate principles and corresponding practical approaches.
6. The national legal and policy framework for grassland should provide for increased local flexibility in designing and implementing land tenure arrangements for grassland based on unique local circumstances and preferences, including common property resource management approaches – The persistence of common property management regimes on grassland in substantial areas of China is an expression of the need to develop tenure and management arrangements suited to particular local circumstances. Rather than trying to fit local circumstances within a narrow legal and policy framework, legislators and policymakers should consciously recognise and validate successful local innovations, including a variety of resource management systems based on or including elements of common property management.

## *Legal and policy recommendations*

**Recommendation 1:** Formulation of central government laws and policies governing non-arable land tenure should permit a variety of common property management systems, in addition to household management, in order to account for a broad range of factors not addressed in current laws and policies.

Both our fieldwork findings and a variety of scholarly research on non-arable land tenure arrangements point to many factors that must be considered in formulating laws and policies that institutionalise such arrangements. The presence or absence of these factors, as well as their relative impact on policy success, may vary substantially even at the village level, making legislative flexibility and local participation in the process of determining appropriate tenure arrangements crucial aspects of their success.

Although the extent of our fieldwork in Zhongdian County was limited, covering only three villages, cadres and herders detailed a number of factors underlying local grassland tenure arrangements. Traditional common property management practices, based on long-standing cultural preferences among Tibetan and Yi minorities, remain an important underpinning for local grassland tenure. These preferences remain particularly strong for alpine pastures, and to some extent for collective pastures. Aside from these cultural preferences, local herders also pointed to a number of practical factors that have contributed to an inability to institutionalise individualised household tenure for grassland in Zhongdian. A primary obstacle identified by herders was the inability of households to effectively manage, or even assert rights to, the pasture currently under collective management, given both the area of land involved and the remoteness of alpine pastures. A second factor was the expense involved in effectively demarcating and enclosing individualised pastures. Both cadres and herders emphasised that they would be unable to bear the financial burden associated with fencing, meaning that any individualisation effort would require substantial government subsidies or outside sponsorship.

Generalisation of our fieldwork findings – from a few villages in Zhongdian to all of China – is difficult. However, our findings from Zhongdian clearly demonstrate that the unique geographic, cultural, and economic circumstances present in any particular area where grassland is an important resource may strongly favour common property management systems over individualised household tenure. Therefore, the checklist of issues presented below focuses on issues that must be addressed in order to effectively institutionalise tenure arrangements for grassland in China.

For grassland, we would reiterate what we have said above concerning forestland. The ultimate determinants of tenure arrangements for grassland need to be made by local actors, in light of local circumstances, developing appropriate policy responses within a broad framework established at the national level.

Rights to common property resources must be carefully and clearly defined and allocated for the system to achieve its potential benefits (Giovarelli and Hanstad 1999). Issues to be considered include the following. Who has access to the common resource? What formula will be used to determine appropriations? Who has authority to appropriate and regulate use? And, what methods will be used to calculate and

enforce appropriations regulations (Bromley and Cerna 1989, de Haan et. al. 1997)? A number of experts agree upon a primary list of design principles, useful in addressing these issues and establishing an efficient and sustainable system of common property resource management. These design principles are as follows.

- a) Balanced national policies – Policy choices regarding resource appropriation must accommodate a variety of potentially competing economic and social objectives at issue in different production systems and agricultural zones (Steinfeld et. al. 1999). Compromises or trade-offs may be required where national or central government objectives regarding the environment conflict with local, social, or economic realities. In order to effectively govern resource management, policies at the state or central government level must provide specific guidelines, funding, and authority to lower-level institutions regarding policy implementation.
- b) Local authority systems – Implementation of grazing policies requires efficient institutional management to establish clear rights of access to land, monitor for environmentally sound land use, facilitate appropriate involvement in land management, and settle disputes (Steinfeld et. al. 1999). Many experts agree that institutional management, if not ownership, should be reduced to the lowest reasonable level, especially when central governments lack extensive direct outreach and presence, because enforcement of management regulations and effective assessment of resource variability requires site-specific animal tallies and land audits (Steinfeld et. al. 1999). Furthermore, localised institutions tend to be adaptable to social norms and behaviours and more responsive to the economic needs of the communities they govern. Local-level institutions are better able to harness local knowledge and foster a sense of responsibility for identifying problems and finding solutions at the local level (Steinfeld et. al. 1999).

Pastoralist organisations, or peasant enterprises, are able to establish units of resource allocation and utilise authority systems, which are often culturally predefined. These institutions, designed by resource users, limit state or central government management costs over the long term and minimise defiance to regulations formulated externally (Bromley and Cerna 1989).

The unification of resource use and maintenance under one localised management agency creates a potentially self-policing system, in which all users regard resource degradation as detrimental to their own interests. For example, in several Swiss communities, the list of fines and overdue payments is read at the meetings in order to allow community members to apply pressure to non-conforming users (Bromley and Cerna 1989).

- c) Clear legal access rights to the resource – Legal rules governing access to common property resources must provide user groups with exclusive rights to their allocated portion of the resource in order to minimise damaging, unrestrained competition among resource users. Exclusivity should be structured around identified ownership or management groups with membership in the group and the boundaries of the resource clearly delineated (Bromley and Cerna 1989). Allocation of use rights within these groups must also be clearly

delineated based upon such factors as individual holdings or seasonal grazing requirements (Stevenson 1991). Grazing rights within defined communities should vary equally among individual grazers as seasonal variations in available forage mandate. In many cases, a legal system of rights valuation determines the number of rights, based on forage availability, necessary to graze a particular type of animal (for example, 2 rights = 1 cow or 3 sheep, Stevenson 1991).

- d) Audits of land condition and community behaviour – Rules establishing active monitoring of the resource can enable appropriators to determine the seasonal capacity and distribution of lands allocated for grazing purposes (Steinfeld et. al. 1997). Site-specific monitoring also facilitates the assessment of fines and fees based on discrepancies between land use regulations and actual community action. Calculation of stocking rates, dates of resource use, and the specific location of resource extraction are vital to regulation enforcement and are made possible through constant monitoring. Frequent inventories of the resource also allow funding for resource maintenance to be targeted more appropriately toward degraded land. Existing administrative institutional capacity must, however, be carefully considered in developing the rules governing such a monitoring system.
- e) Participation in rule-making processes – The involvement of resource users, or community members, in determining resource management rules enables lower-level institutions to efficiently implement upper-level policies (Bromley and Cerna 1989). By synthesising resource user knowledge with national policies governing resource management, lower-level institutions increase the likelihood that appropriation regulations are suitable and will be followed.
- f) Rapid, low-cost dispute resolution – Rapid, low-cost dispute resolution is necessary in the regulation of pastureland, because harmful competition for the resource is inevitable when immediate enforcement of access rights and use regulations is lacking. Dispute resolution costs must remain low, because expensive settlement costs can preclude enforcement of regulations by lower-income resource users. Disputes must be settled rapidly, because the fragility of marginal grazing lands makes them readily susceptible to damage, jeopardising the future of users with small holdings.

Lower-level institutions can facilitate rapid, low-cost dispute resolution, based on the proximity of the administrative body and the familiarity of local officials with local customs (Bromley and Cerna 1989). The number of disputes can diminish if the regulations formed at the local level more accurately reflect customary interactions. Increased accountability in local institutions can provide a self-policing mechanism, in which resource users actively pressure those in violation of land use regulations into conformity (Stevenson 1991).

- g) Management tools, including fines and sanctions, fees and taxes, and other mechanisms – Legal rules allowing graduated fines and sanctions to be imposed by appropriators, or officials accountable to appropriators, provide a necessary economic deterrent to the grazing of animals in excess of allotted grazing rights (Stevenson 1991). Fines assessed at the local level enable assessors to tailor sanctions or fine amounts according to site-specific damage. Additive fines and

sanctions can provide an effective deterrent mechanism, if the economic incentive to violate regulations decreases with the extent of the violation, and the true cost of grievous violations to the resource is reflected in the growth of the fine (Stevenson 1991). Fines or other penalties must simultaneously be substantial enough to be painful to the violator but not so severe that they lack credibility.

Use fees or land taxes are often necessary to provide for the basic infrastructure of land management and can potentially be used as a tool in deterring the addition of animals to the common resource. Fees are typically based on the number of animals grazed or the number of grazing rights held. In order to work as a tool to limit overgrazing, fees must be structured so that they deter a herder from placing too many animals on the land. One method could be to increase the fee per head for every additional animal.

In cash-poor economies, work duties or other methods of direct resource maintenance can replace fees or taxes (Stevenson 1991). These methods commonly calculate a number of hours of maintenance required of each resource user, based upon either the number of animals grazed or simply by virtue of resource use (Stevenson 1991). Utilising the labour of resource users in maintenance of the resource may be more cost-efficient than funnelling money through management agencies and may potentially instil a greater sense of stewardship among resource users.

**Recommendation 2:** Forthcoming laws addressing rural land tenure should explicitly allow for local variations with respect to forestland and grassland tenure.

As noted above, China is currently in the process of drafting or revising two laws with great potential to impact non-arable land tenure arrangements. These laws should be drafted in a manner that explicitly allows local governments and communities to develop and implement land tenure arrangements for forestland and grassland resources that are both consistent with national policy objectives and tailored to unique local circumstances. Specific recommendations concerning each law are described below.

The Property Law – China's forthcoming Property Law will establish a broad set of principles applying to all forms of rural land use rights. The published 'Expert Version' draft of the Property Law makes clear that laws, rather than land use rights contracts, ultimately prescribe the nature of land use rights. As such, the body of laws governing agricultural land use rights must address a series of issues that define the common characteristics of agricultural land use rights. It is crucial, however, that drafters of the Property Law recognise that it may be appropriate to vary the specific characteristics of agricultural land use rights depending on the type of land.

Providing a clear and uniform statement of the characteristics of arable land and wasteland, while simultaneously allowing a more flexible approach to grassland and forestland, could be achieved by applying all provisions of the Property Law uniformly with respect to arable land and wasteland, but only presumptively to grassland and forestland. This could be accomplished by clarifying current Article 231 of the Expert

Draft, pertaining to the establishment of agricultural land use rights. Article 231 simply states that, 'Agricultural land use rights shall be established on all types of land used for agricultural purposes.' To allow for flexibility in non-arable land tenure arrangements, a second sentence should be added to Article 231 that reads as follows. 'Land use rights to cropland, forestland, grassland, wasteland, and land used for aquaculture shall be subject to the provisions of this chapter and all laws concerning each category of agricultural land.' Such a revision to Article 231, when combined with current Article 235 of the Expert Draft, which enables possession of agricultural land use rights by 'households or a number of individuals,' would provide the broad legislative framework necessary to enable more detailed legislation on non-arable land tenure arrangements involving common property management.

The Rural Land Contracting Law – Within the broad framework to be established by the Property Law, the forthcoming Rural Land Contracting Law, China's first law devoted specifically to the issue of rural land rights, will also play an important role in providing flexibility in non-arable land tenure arrangements. A draft version of the Law received its first reading by the National People's Congress on June 26, 2001. Media reports related to the draft indicate that it will require contracting of all forms of rural land, including forestland and grassland, to individual households for a use term of 30 years or longer.

In light of the findings detailed above, we recommend that two separate provisions, one addressing forestland and one addressing grassland, be added to the Law. These provisions should state as follows.

'Rights to forestland [grassland] may be contracted to units other than households for common or joint operation and management, where local conditions have been deemed appropriate and the relevant administrative units of the People's government at the county level or higher have adopted local regulations concerning such contracting arrangements. Such local regulations shall be consistent with the principles of this law and any Implementing Regulations issued pursuant to this law.'

The combined legal impact of these provisions – The inclusion of these general enabling provisions in China's forthcoming laws on rural land rights would not ultimately resolve the complicated series of issues China still faces with respect to non-arable land, nor would it undercut household contracting as the fundamental principle of non-arable land tenure in China. It would, however, have at least two significant and immediate impacts on non-arable tenure. First, it would legally sanction and recognise existing forestland and grassland tenure regimes based on indigenous knowledge or local adaptation that, while perhaps not consistent with existing national laws and policies, may be extremely effective in meeting the myriad goals that underlie those laws and policies. Second, it would require local actors themselves to adopt regulations, consistent with the principles embodied in national laws and policies, to govern forestland and grassland tenure. Through such a process, the voices of local actors and innovators could be woven into the broader fabric of a set of national laws and policies to create a flexible but consistent governing framework.

By contrast, the adoption of the Property Law and the Rural Land Contracting Law based solely on a system of household contracting, and without any such provisions enabling local variations, would have a number of important negative results. The most

drastic impact would be that all existing forms of forestland and grassland management not based on household contracting, including many successful local approaches, would be placed clearly outside the scope of Chinese law. These areas would be forced to choose between two options. The first option would involve abolition of the current tenure arrangements and implementation of household contracting of forestland and grassland. Our fieldwork in Yunnan indicates that such a process would likely conflict with the values and preferences of local farmers and herders in many parts of China, and may result in less effective resource management. A second option would be to continue management of forestland and grassland under existing tenure arrangements. This would inevitably complicate existing legal uncertainty concerning the management of such land, result in increased land disputes, and undermine attempts to introduce the rule of law in rural areas.

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