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## **GRASSLAND POLICY, PRIVATISATION AND NEW ECOLOGY IN INNER MONGOLIA<sup>1</sup>**

‘Communal use and management of the grassland has led to overgrazing, increasing erosion and in the worst cases, desertification... The appraisal team accepts the underlying premise that privatisation of the land through the allocation of UR (User Rights) is a necessary step towards improved grasslands management...’  
(Anxin Project Design Document, 2002)

‘I have lived here all my life, and my father before me and his brothers...we have always taken care of the communal grassland because it belongs to all of us in the village.’  
(Arsleng, ethnic-Mongolian male herder, project village, July 2003).

This paper argues that the recent policy trend toward grassland ‘privatisation’ and the household enclosure movement are generating conditions for greater inequalities and the decline of natural resources. Evidence is supported among recent comparative studies undertaken elsewhere in Inner Mongolia. The trend towards separate enclosures incorporates the normalising and generalising discourse of ‘grassland science’ (using the concepts of carrying capacity and succession theory), modernity and development towards minorities<sup>2</sup> who possess their own cultural constructions on environment, identity and ethno-ecological knowledge, though subject to immense external pressure since the collectivisation and post-collectivisation periods.

In the context of modernity’s planned development project, a much more critical position is required in order to understand the impact of enclosures in non-equilibrium<sup>3</sup> contexts and its effects on peoples’ lives. This is especially in relation to differentiations generated by the normalising power of microeconomic policy and the complexity of the relationship between enclosures, cultural practices, and grazing pressure intensification.

### *THE PROJECT*

The argument is grounded on early experiences from a second revised phase of an Australian-funded grasslands management project (2002-6) situated in North-eastern Inner Mongolia. It follows on from a Phase One (1996-2000), which was resoundingly criticised by agency reviewers for its lack of participation and over-emphasis on a technical fix to what is essentially a social, institutional problem. The project includes two ‘counties’ (Banners) and eight rural

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<sup>1</sup> As this project is only in its second year and for reasons of commercial confidentiality, pseudonyms have been used and some comments directly relating to this project omitted. The opinions in this paper are those of the writer alone and do not reflect the position of the Project Managers, Chinese, or Australian Governments. For purposes of this paper the project will be referred to as the Anxin (League) Project.

<sup>2</sup> There are more than a dozen ethno-linguistic groups in Inner Mongolia, though since the mid-1980s more than 80 per cent constitute Han Chinese in-migrants (mostly located in and around the main urban centres), followed by around 14 per cent ethnic Mongolians. The Daur, Ewenki and Oroqen Peoples have their own autonomous counties.

<sup>3</sup> Since the 1980s understanding of the development of complex systems has changed from seeing ecosystem stress in terms of simplistic notions based as stability and resiliency. Indeed, it is argued that stress-response is determined by a much richer set of concepts indicating that complex system development is non-linear, irregular, unpredictable, and multi-valued (for an overview see for instance Oba *et al.* 2000).

‘townships’ (Sumu) - as well as administrative villages (Gacha) and natural Mongolian villages (Aili). The paper does not intend to be a full critique of the Australian project as to raise some issues for consideration comparing with recent findings elsewhere in the region.

The goal of the project is to improve the ongoing analysis and implementation of grassland User Right<sup>4</sup> policies and regulations to promote sustainable and economic use of grassland resources. The general purpose (amended from original Project Design Document) is to strengthen the capacity of the Animal Husbandry Bureau and local resource-users to co-manage and monitor the grasslands, so that resource-users themselves can take collective responsibility and ownership of their natural assets<sup>5</sup>. Building the natural asset base of the poorest herders in the grasslands would, it is argued in the revised project design enable them to capture the flows of income and non-income benefits afforded by these assets, thereby assisting in poverty reduction more generally.

Interestingly, the original position in the 2002 Project Design Document argued that it was the larger, rich herders who should be targeted for assistance as they had the most impact on the grasslands and were most likely to cause environmental degradation because they had most animals. These richer households were to receive assistance in the form of loans, fencing materials, improved genetic material, and so on. After the commencement of the project a counter-position was presented to the funding agency by the author showing that the grasslands are in fact highly contested and unequally shared and that ignoring the plight of the poorest quartile is sure to create greater, not lesser, resource exploitation. It was clear that well targeted pro-poor natural asset building strategies combined with User Right (a theory of property right closest to rural “privatisation”) would ensure some degree of environmental protection, safeguarding the rights of current and future generations as a whole to sustainable pastures and ensure that this right is enjoyed equally by all resource-users.

#### *THE STATE AND ENVIRONMENTAL ENGINEERING*

The state/regional government have centred debate about the need for ‘protection’ (fencing) and ‘construction’ (planting grass and trees) in the grasslands. But its interests extend beyond the problem of land degradation<sup>6</sup>. Inner Mongolia constitutes a quarter of China’s total grasslands

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<sup>4</sup> User Rights- or so-called ‘Two Rights – One System’ (two rights [ownership held by both state &/or collective; in the case of IMAR this is only at the collective or administrative village level, and utilisation rights] -one system [system= household contracting obligations]) adapted from the late 1970s household responsibility system on arable land to pastoral systems introduced in 1983 to Inner Mongolia and further refined to its present policy form in 1997. It is embodied in the 1985 PRC Grassland Law- the only national law concerning grassland tenure and management (Schwarzwalder *et al.*, 2001:5). This law was slightly amended in 2002 to account more fully for semi-pastoral conditions. It involves the issuance of 30-year user-certificates based on reallocated pastures, according with PRC policy of encouraging individual production incentive systems. Highly contested, grassland User Rights issues are politically entangled in local interests and the history of de-collectivisation. In terms of policy value, this writer agrees with Williams (2002:121-2) who says that grassland User Rights have not as yet generated any real equitable benefits. The adaptability of policy to local contexts needs to be shown.

<sup>5</sup> On this important aspect see Ahmad (1998:11)

<sup>6</sup> Land degradation, following Leopold’s early interpretation (in de Queiroz, 1993:3), can be viewed from two aspects: firstly, the commodity production capacity of a land resource, and secondly, the mechanism by which an ecosystem is able to regenerate itself. The term needs to be clearly contextualised in accordance with a particular production system Even then it refers to ‘management-induced impact which damages basic ecosystem processes and compromises the ecosystem’s ability to regenerate itself of its own accord’ (Ibid.4). Blaikie (1985) links degradation and specifically soil erosion into political economic processes;

and is a leading producer of meat, wool, and cashmere. Framed in this economic backdrop, there is serious national concern over soil erosion and increasing desertification<sup>7</sup>. No walls (even the Great Wall, seen from the air coming into the project site) or fences, symbols of domestication, hegemony and spatial control, can prevent the seasonal intrusion of sandy topsoils blown in from the region.

There is surprisingly little disagreement in the scientific community as to the actual causes and the possible solutions to this ecological problem, as in fact what constitutes or defines land degradation is clearly contested by various resource users (Williams, 2002:43; de Queiroz, 1993). As stated in many official documents, the problem is too many grazing animals and the solution is reduced stocking. Most herders interviewed on the project will say that the most critical consideration is not so much animal numbers but seasonal variation, resource available and temporality (critical feed time). In this regard, Harris (2000: 11) also notes the need for indexing inter-year variability of forage production in order to assess the dynamics of the grasslands.

In the Anxin Project there is a policy contradiction – as elsewhere in China’s frontier grasslands – encouragement to increase grazing numbers by the Animal Husbandry Bureau emulating western ranching systems (see also Foggin and Smith, 1996:6), while at the same time recognising a need to reduce environmental stress (see discussion later). Meanwhile, Chinese cadres and scientists (and Western scientists) continue to blame irresponsible, ignorant and ‘backward’ minority land users (Williams, 2002:30). In this view, herders are culturally quaint (certainly good for new ‘cultural tourism’; see Evans and Humphrey, 2002) but lacking any useful science.<sup>8</sup>

Now, surprisingly, given the wide recognition of the degradation problem and the considerable scientific literature on grassland ecology, there has been little attention given to cultural practices and human motivations of grassland inhabitants. For instance, in the government’s ‘Grasslands Ecological, Environmental Protection and Development Plan of China 2001-2010’ the solution to grassland problems (overgrazing leading to degradation or desertification) is in a ‘combination of biological, engineering and agricultural methods’ (Ibid.). There is no mention of how the more than fifty ethno-linguistic groups who inhabit China’s grasslands can participate in this ambitious singularly defined ‘engineering’ venture except in suggesting strengthening policing and penalties. It would seem that the solution is to be found in science, technology, and of course *the* market.

The market in this sense follows the current stage of the ‘socialist market economy with Chinese characteristics’, which favours the current land tenure arrangements (Ho, 1998). The market refers to individual ownership of grazing land and is based on the assumption that privatisation<sup>9</sup> will encourage more responsible management and sustainable use of the grasslands. Indeed, the extent to which the re-allocation of pastures has been made to individual households has never

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the incorporation of small scale farming systems into wider global capitalist system and corresponding external pressures.

<sup>7</sup> Estimated in various official sources to be between 2,100 –3,400 km<sup>2</sup>/year.

<sup>8</sup> As Drinkwater (1990) says, we need to accept new ideas about grazing management that acknowledge what local herders ‘actually do rather than the stupidity’.

<sup>9</sup> Strictly speaking, in rural China ‘private property’ does not exist with restrictions placed on transferability and alienability. According to the *Grassland Management Regulation* (1984,1991), all grassland in Inner Mongolia is either a state and/or collective property.

been known before in Inner Asia (Humphrey and Sneath, 1996:12). It has serious consequences for pasture degradation connected to the restricted communal movement of animals (I'll return to this later). Ironically, the converse has been argued: the strategy of encouraging privatisation of communal pastures has been made under the pretext for preventing degradation (de Queiroz, 1993:13).

#### *A COMMON TRAGEDY*

The Project Design Document sells the privatisation argument as an 'off-the-shelf' solution - but with little understanding of non-normative local contexts (Perrier, 1990:6). The document is the outcome of work undertaken by the Australian Government's technical consultants who had spent three weeks at the project site, and in reports heavily derided customary communal production systems:

Communal use and management of the grassland has led to overgrazing, increasing erosion and in the worst cases, desertification...If the project succeeds in implementing the policy in a more comprehensive and participative way then it will be helping to establish privatisation, and will also promote individual responsibility to manage the grasslands sustainably. Further, the regulations relating to transfer of UR, if fully implemented, are likely to have the effect of encouraging smaller herders and non-livestock owning households to surrender their use of the land for economic gain. *Thus the trend seen in developed countries, of a move to larger farms in the hands of fewer people, could be hastened by the project* (my emphasis added).

Interspersed in this quotation are politically correct terms like 'participation' and 'sustainability' hiding the real focus of the intervention: privatisation and the privileging of individuals/households against perduring local user-groups. The definition of 'communal' requires some clarification as this concerns semantics and associated historical events – the 1950s-1970s People's Communes and its tripartite management arrangement. The ownership of the grassland (primary resource) was under the commune (the rural township); ownership of livestock (secondary resource) was under the production brigade (administrative village), and ownership of implements under the production team (natural village)<sup>10</sup> who were also responsible for herding (Ho 1996:9). It failed because no one cared for monitoring and managing the commons in sustainable ways as previously under traditional practices (Ibid.12). As well, the attitude that the pasture belongs to no one has prevailed until the early 1980s with the introduction of the household contract responsibility system (to become User Rights in 1997) (Ibid.16).

Among a minority group in western Inner Mongolia, Ho found that despite the change of status and introduction of User Rights, pastures are seen as 'open access systems' (or 'eating from the big rice pot', Ibid.20) with no community responsibility in place for managing the natural resources (Ibid.17-8). It failed here because User Rights had not taken into account local variations; there was also local opposition from certain cadres whose careers were rooted in the earlier commune system. User Right policies were transferred wholesale from cropping land to the grasslands with little or no consideration for the obvious: Livestock move about, crops do not: both entail quite different cultural regimes.

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<sup>10</sup> The natural Mongolian village ('Aili') in the project consists of around 20-50 patrilineal-based households, with some two-four villages in the same vicinity constituting a formal administrative unit ('gacha').

In the above quotation from the Project Design Document, the implications of encouraging a move to larger farms under a relatively few rich households are devastating for small semi-subsistence farmers and herders. Most of the primary stakeholders in the project area depend on informal kinship networks linking rural and urban families ensuring the flow of goods and services. In the project area there has been an increase in the economic significance of kindred and kin networks through local governments (see also Humphrey and Sneath, 1996: 6-7). These families survive on partial subsistence production, namely production for small-scale exchange, along these networks, which are important for livelihood security in an insecure economic and ecological context (Sullivan and Homewood, 2003: 27, 28). In the project, richer herders have used their relative position of power over their local kindred and social networks to exert considerable influence in the formal processes of User Rights.

The above quotation is also based on unproven and culturally inappropriate economic assumptions in the context of traditional social groups undergoing transformation while continuing customary reciprocity (labour sharing). In any case, whatever markets emerge in the near future, it is reasonable to assume that as long as real incomes remain low relative to food prices, much rural produce will continue to pass along these network relationships (Humphrey and Sneath, 1996:15, 17).

This paper argues that it is doubtful that, contrary to conventional representations, it is the irresponsibility and selfishness of herders who own herds and not grasslands and so exploit it without concern for the long-term consequences that causes land degradation.

A further example may be noted in a recent ICJ Report (1998-2001), where under similar conditions among Tibetan herders the commons are cared for under well-understood community access and management rules. It was found that common resources could be managed sustainably

1. Where there are few differentiations within a group;
2. Where there are similar production regimes;
3. Where group membership has important benefits aside from those concerned with production; and
4. Where rules governing resource use are effectively enforced by the group

As the ICJ report continues, the converse is the case, where there are large wealth or status differentials; where group membership has few perceived benefits; and where rules about resource use and management are not enforced or not able to be enforced, it is unlikely that common resources can be sustained. This situation may prevail where the state manages common resource-use with poorly designed and equipped centralised apparatuses, inflexible and inappropriate regulations.

Ho (1996:20) denies that the grasslands became degraded because of common property regimes. Nevertheless governments and international funding agencies see the problem differently, thanks in no small part to biologist Garrett Hardin's<sup>11</sup> argument, which became the dominant position of

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11 Hardin's (1968) influential 'tragedy of the commons' was based on an 'open access' or 'free rider' theory and misleading in relation to common property resource management systems where an individual's consumption is related to the deprivation of others (see Ostrom in de Young, 1999). A useful discussion in relation to pastoralists is provided by Dee Mack Williams (2002:74-7); see also Ian Scoones (1996); Daniel Bromley and Michael Cernea (1989).

development institutions and governments since at least the 1970s (Simon in Williams, 2002:76). The conservative response to Hardin's thesis was to parcelise and privatise the commons with a good deal of stock fencing thrown in, causing considerable concern for kinship-based pastoralists (Ibid.76) used to agreeing on seasonal management practices and sharing common resources.

The consequence is the undermining of existing community rules and regulations, which have been shown to work well for generations. This is also a fundamental argument in this paper. In this negative ICJ scenario, free-riding resource-users are more likely to ignore the rules altogether resulting in a 'tragedy of the commons' scenario.

In the project area ownership of grazing pastures through user-right allocations is highly skewed in favour of the rich and influential, with only a small percentage of households controlling most livestock (see also World Bank 1991, chap 3, p.5). In the project area, as Humphrey and Sneath (1996:11, 19) found elsewhere in the region, privatisation, along with reduction in animal movement and group herding seems to be directly correlated to a real decline in pasture quality. This ICJ finding runs counter to the Anxin Project policy of encouraging privatisation of the commons and where the problem of overgrazing is seen as essentially community generated:

Within the present socio-political environment, as long as utilisation remains communal, there is little chance of improved management systems being implemented, as the resource will continue to be regarded and utilised as a common good. Under these conditions, recent trends of environmental degradation will continue. Privatisation provides the necessary framework for individuals to capture the benefits from investment in improving the resource and therefore provides the incentive for them to make the investment or to adopt improved management practices.

*Lessons Learned Recommendations* (Australian Government Document), Anxin Project, 4 November 2001.

Evidence from the project indicates that overgrazing became a problem with the introduction of Grassland User Rights since the early 1980s. Arguments that this is simply a population problem is only a partial explanation; planned community relocations, confused User Right policy interpretations and exploitation of this by the local elite, the active encouragement by the Animal Husbandry Bureau to increase levels of livestock production were another side of the problem.

#### *SUSTAINING ANIMALS AND LAND*

Aside from Peter Ho's (1996, 1998, 2000) work among the ethnic Hui referred to above, two other recent social scientists<sup>12</sup> working among Chinese pastoralists are worthy of mention: Tony Banks (2001, 2001a) in Altay Prefecture, northern Xinjiang-Uygur, among ethnic Kazaks, and Dee Mack Williams in Chifeng Prefecture among ethnic Mongolians. These studies have shown clearly that, contrary to the neo-liberal logic of a 'tragedy of the commons', privatisation (which is really what User Right policy entails) is not working as well as expected. They also show that individual enclosures and the issuance of household responsibility system since 1983 have largely

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<sup>12</sup> Gregory Perrier (1990: 6) noted among pastoralists in Africa that the impediment to understanding local livestock production systems was the reluctance of grassland specialists to develop social science skills to work with pastoralists, 'and to observe and accurately describe range and livestock management strategies'. Likewise Y.Ahmad (1998:5-6), also commenting on African pastoral nomads, says that cultural values (especially emphasis on equity and sharing) in defining social and economic change among pastoralists have not received the attention they deserve in development interventions.

failed to bring about significant improvement in either ecological stability or the quality of life for farmers and herders (Banks, 2001; Williams, 1996, 2002). These conclusions were based on the premise that the establishment of individual household tenure will give pastoralists the incentive to stock pasture within a 'carrying capacity' (discussed below) defined by techno-scientific principles and invest in pasture improvement (Banks, 2001: 718).

As Williams (2002: 76) says, the routine eradication of the commons and those herders who have for generations maintained these commons does not always ensure sustainable land use. The problem is clear, User Rights has been a knotty issue because it has been discordant with the social, cultural and economic realities of herders; the characteristics of natural resources, customs and social values, etc., along with the broader institutional environment (Banks (2001: 719). Thus, Banks correctly concludes, issuing household User rights may not be the most effective or efficient institutional arrangement for natural resource management.

There are other important considerations to ensure sound resource management. This includes secure tenure, equity and access, institutional credit, marketing, and legal protection (Williams, 2002: 13). In any case, the community should be empowered to protect the commons from encroachment, regulate seasonal movements between pastures and arbitrating in local disputes. This would redirect emphasis on the importance of flexible management strategies incorporating seasonal animal movement to make use of the best grasses in a given season or year (Humphrey and Sneath, 1996: 13; Ho, 1998). It is clear that herders in the project area see pasture as having a particular seasonal value; if there is snow, winter pasture does not require water but needs a good windbreak; spring pastures require a position on southern facing slopes where snow melts more readily and grasses grow quicker; summer pastures require access to water, while autumn pastures require particular grass species that promote lactation and fat accumulation (Szynciewkicz in Williams, 2002: 181).

In fact, the enclosure system, despite the state's modernisation drive, is not the preferred option for most herders residing in more densely populated semi-pastoral areas. In terms of rationalisation and economics, these herders have opted instead for continuing public or group herding arrangements that bring the community together as resource sharers. However, this runs counter to conventional microeconomics, which states that the non-excludability of others is seen as reducing incentives for investment in improvements and, even creating incentives for individuals to exploit natural resources, etc. Instead, herders argue that group herding means realising economies of scale with respect to labour and least-cost institutional arrangements. This facilitates joint use of pasture and equitable access to resources, especially marginal and patchy grasses that would otherwise not be easily subdividable.

It is clear that science should be partnered with good local agro-ecological knowledge (see also Hocking and Mattick, 1993) and that for scientists to discount herder viewpoints which is typical in the project area is in itself akin to ignorance. The relationship between scientists and herders is constituted by the knowledge and categories of science (Hobart 1993:2). Indeed, we need a more critical position when it comes to trust in systematic, rational and scientific knowledge as universal and the only version of knowledge. As this kind of one-sided knowledge claims increases so does the possibility of ignorance, if herders are presented as mere objects to be changed (Hobart 1993:1, 14; Taylor 1999).

The failure to understand the importance of actor perspectives was the main reason for considerable foot-dragging among herders over the scientific calculation of carrying capacity

(CC)<sup>13</sup>. Estimates of CC are based on assumptions about the impact of livestock on plants and plant succession and refer to the most animals, expressed as basic 'Livestock Unit' that an area could *sustainably* support without causing degradation<sup>14</sup>. In general, CC has long provided a basic planning and management tool in many development interventions intended to ensure the sustained use of pastures (Stoddard *et al.* 1975).<sup>15</sup>

Heavy livestock grazing is thought to lead to a decline in the condition of the grassland, and reducing or removing grazing pressure assumes that plant successional processes would restore the range to its previous condition. However, there is more to the problem than this, as this paper intends to show. In any case, it has been argued that CC should consider not just TDM (although important in arid and semi-arid areas with little available herbage), but also nutritive value such as crude protein content, energy and mineral levels in the TDM (FAO report in de Leeuw and Tothill, 1990: 4, 13).<sup>16</sup>

The project's Australian Farm Management Specialist recently advised that the solution to the problem of grassland degradation can be achieved if 500 kg DM/ha is left as groundcover. A simple enough statement – but harder to meaningfully interpret in practice, because somewhere between the production of scientific estimates are differentiated human actors who have their own understandings of degradation and sustainable resource use.

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<sup>13</sup> SCC/ha = net supply/intake per Livestock Unit – based on total herbaceous forage productivity (as total dry matter TDM).

<sup>14</sup> See Dijkman (1998); Hocking and Mattick (1993: 4-5); and de Leeuw and Tothill (1990: 2). Early grassland/range science was influenced by Clements' (1874-1945) succession as it fitted into the larger political and economic constraints at the time. Essentially, it proposed a fixed 'natural' potential for the vegetation in any given area (so-called 'climax'), implying a definitive CC for livestock grazing. This implied extensive fencing to define an area and productive potential measured in livestock. Importantly, it enabled bureaucratic control and the imposition of market values. It also assumes a 'natural' inclination of vegetation to return to its climax conditions (i.e. 'succession') after a disturbance such as grazing. These early grassland scientists saw a linear, negative relationship between succession and grazing pressure, reinforcing the emphasis on stocking rates. This may have worked well in high rainfall areas where most of Clements' research was conducted but not so well in drier, more ecologically sensitive regions. It was enthusiastically adopted in North America through federal grazing leases and emergent grassland science (see 'In search of nature', Cronon, 1996). The value of the Clementsian model as a basis for assessing grassland condition has been questioned since the early 1980s (de Queiroz, 1993: 3), especially its assumption of a transition in either direction between a pioneer plant community colonising bare soils and a climax state which represents the most diverse mix of species which a climate or soil can support (see Adel, 1990). In this view, degradation implies shifting to a lower succession level, as in overgrazing. Here, if animals are not allowed to graze, progression towards the climax continues. De Queiroz (*op.cit.* 4) suggests an alternative in a 'state-and-transition' model that 'allows for a number of relatively stable vegetation states at a particular site...'

<sup>15</sup> For an understanding of the CC concept in practice it is necessary to refer to the extensive discussion published by the Pastoral Development Network in the British Overseas Development Institute, based largely on work in sub-Saharan Africa since the 1970s (Hocking and Mattick, 1993: 4). The utility of CC has been questioned in light of the general failures of pastoral development programs in Africa (Ibid. 13).

<sup>16</sup> De Leeuw and Tothill's (1990) paper presented a strong case against CC, but paradoxically concluded that it was nevertheless still useful for grassland management. A concise critique of their conclusion is presented by Bartels, Perrier, and Norton (1990).



Australian experts in Phase One included 'sustainability' to CC (s/CC) on the assumption of a long-term productive base of grassland resources and the introduction of genetically improved livestock (more efficient converters) utilising this resource. Sustained livestock production naturally assumes the continuance of productive grassland resources (see also Bartels *et al.* 1990: 2). The project managers uncritically adopted the simplicity of this position and an unrealistic implementation plan minus any input from resource-users was accordingly then put in place. S/CC was *de rigueur* in Phase One where the main management concern was how to control grassland degradation through the regulation of livestock numbers; hence, the original project's design emphasis on supporting larger, richer herders with the largest number of grazing animals.

The notion that there is a correct CC embodying land productivity and climate variations at a particular grazing site is fundamental to conventional grassland science. In more marginal climatic pastoral areas, aside from the technical complexities of calculating CC, it can offer only a static assessment whereas in practice there is often considerable spatial and temporal variability<sup>17</sup>. It assumes that the conditions for plant growth remain the same. Further, CC assumes that one category of livestock is kept in a definitive area, under one form of management (and excluding possible use of feed by-products where applicable). In fact, it has been argued that CC must be related to real production objectives to have any real worth, which determine the particular plane of nutrition (Hocking and Mattick, 1993: 10). For that reason alone and the over-emphasis on DM intake and seasonal and annual production of biomass, Bartels *et al.* (1990: 4, 7), from African experiences, suggest that CC is of questionable overall value in dryland pastoral management.

Clearly what is needed for post-traditional pastoral regimes (as in the project area) is the inclusion of flexible open arrangements that allow for continuance of social norms such as reciprocity (e.g. spring time labour exchanges), which may at times put pressure on a group's grazing resource and local management and monitoring of common resources (see also Sullivan and Homewood, 2003: 32). A management system along these lines needs to be able to regulate the use of niche resources in relation to stocking rates, seasonal primary production levels, and an agreed basis for the implementation of User Rights. This is far more likely to be sustainable and culturally accepted than the current practices of imposing grazing restrictions and de-stocking to resource-users, based only on CC (Djikman, 1996). In the project area currently undergoing land reform through the implementation of User Rights, the CC concept was not able to identify the effective decision makers, aside from individual households with allocated enclosures. In turn, the household User Right system neglected to consider that common resources are not dependent on individual households alone but rather on group/community decisions (see also Bartels *et al.* 1990: 6).

The issuance of household User Rights and fenced enclosures has naturally had negative impacts on herd mobility, which can generally respond well to ecological diversity. Local herding groups have seasonally moved their animals sequentially making optimal use of niche resources, including importantly water, in diverse settings. Herders consider landscape variability an important consideration for production and, while grass is indeed 'good to eat', animals need shelter from wind, they need moisture, browse matter, shade, and exposure to an array of seasonal forage, in varying amounts during the year (Williams, 2002: 181). This is an effective response to the uncertainties of a harsh natural environment and certainly improves the productivity of land. Managing mixed species helps to make best use of the diverse nature of these ecosystems (see also Ahmad, 1998: 12). In this regard, the project has also been looking at ways of encouraging

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<sup>17</sup> See de Leeuw and Tothill (1990: 7); Djikman (1996); Bartels *et al.* (1990: 6); and Banks, 2001: 737.

the involvement of kin and non-kin based groups in community-monitored, seasonal, rotational grazing in order to make best use of niche resources.

Grassland science with CC originates from Australia/North America in equilibrium environments where there is sophisticated private management (using perennial pastures, and good average rainfall or irrigation). It is based on single livestock species ranching within an enclosed area aimed at producing high quality meat and maximisation of production gains per animal and per unit of labour. By contrast in Inner Mongolia there are considerable tracts of common pastures still in use by all resource users<sup>18</sup>. Before adapting exogenous systems we should firstly determine its appropriateness for local situations.

#### *NON-EQUILIBRIUM ENVIRONMENTS*

In Inner Mongolia, pastoralists have long had a flexible, open range grazing system suited to optimising favourable climatic and spatial changes. They often run mixed species herds<sup>19</sup>, whose production outcomes are directed towards human survival, milk, wool, capital accumulation and risk aversion, and in general, maximisation of production gains per hectare (cf. Perrier, 1990: 2). Pastoralists living in non-equilibrium ecosystems need to have a CC that makes use of flexible and opportunistic arrangements, as livestock fulfill many objectives. The failure of project planners to understand the nature of such systems has led to inappropriate government policies based mainly on fixing the problem as they see it of environmental degradation.

From the point of view of environmentalists reducing stocking rates, as proposed by earlier agricultural experts, would resolve the problem. However, the reduction policy is at odds not only with production-oriented, output-driven official discourse, but also with the socio-cultural and economic objectives of the herders as this means reduced productivity per hectare (see also Hocking and Mattick, 1993: 14). In relation to degradation, this might have more to do with inappropriate agricultural practices and restricted pastoral mobility than actual stocking rates (Humphrey and Sneath 1996: 11-12). It also calls for more actor-oriented perspectives on the perceived problem of degradation, which is what the current project is undertaking at the local interface.

Conventional grassland science has never been concerned with local viewpoints and is fundamentally concerned with successive changes in plant species composition and how this is affected by particular stocking rates. It is clear that we need to take into account complex species, animal and human (social and cultural) interactions, as an interdependent system. This necessitates a holistic, multidisciplinary approach to grassland management, which is not a conceptual issue for herders, but it is for grassland scientists.

Therefore assumptions that 'one size fits all' is another case of inappropriate science based on conventional equilibrium environments applied to diverse pastoral communities living in non-equilibrium systems<sup>20</sup>. A co-founder of grassland science even acknowledged that: 'there is no

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<sup>18</sup> See Perrier (1990); and de Leeuw and Tothill (1990: 15).

Perrier studied three USAID range-livestock projects in Africa and found that there was a 'poor fit' between project objectives and local realities and considerable diversity within local production systems.

<sup>19</sup> In the project area it is not uncommon to see cattle, goats, sheep and even the occasional pig foraging together.

<sup>20</sup> Briefly stated, carrying capacity and Clementsian vegetation succession have been challenged by Non-Equilibrium Grassland Ecologists. This new theory, engendered from experience among pastoralists in arid regions, suggests that where there is high rainfall variability the ecology is mainly determined by climatic

method whereby any technician can go into a new country and measure anything which will automatically give him (sic) the grazing capacity' (Stoddart in Bartels *et al.* 1990: 4).

In areas of considerable climatic variability and dynamic ecosystem functions, non-equilibrium systems prevail where plant growth and grassland productivity are as much functions of climate as livestock stocking rates, and the effect of livestock on range vegetation more sporadic than continuous (Bartels *et al.* 1990: 3; Hocking and Mattick 1993: 15). In the project area it was found that over the past twenty years rains started later and then were more unpredictable during the critical growing season. From work in sub-Saharan Africa it was found that the optimisation of resource-use need to factor in climatic (specifically, rainfall) variability over a given area in working out suitable stocking rates (Hocking and Mattick 1993: 17; Ahmad, 1998: 13).

Post-traditional pastoralists (at the transition between nomadic traditionalism and post-nomadic modernity) need to have a CC that makes use of flexible and opportunistic arrangements as livestock fulfill many objectives. There is some recognition of this in a 1999 report by an Australian 'Grassland Monitoring Specialist' in Phase One when it was noted that there was no consideration given to 'economic impact or social dysfunction (?)' on the implementation of a stocking rate standard (SRS). Further, the report naively added, 'from a strictly ecological perspective, the SRS rates assigned to grasslands in the project area will effectively halt degradation...' (But the report went on to say) these 'are not acceptable to producers because of the large reductions in livestock numbers...' In the expert's completion report, which came out the following year, it was recommended that 'modifications' be put in place to account for variations in 'grassland situations' – though acknowledged there was not enough time or resources to pursue this.

Australia in fact has undertaken extensive semi-arid research showing that range ecosystem is highly dynamic and climate-driven over time and that the system is better described in terms of its variability than by an average values. This work was not considered and Phase One attempts to work solely with CC estimates for grassland management erroneous and certainly of limited use in the context of Inner Mongolian herders.

#### *LOCALY-BASED ALTERNATIVES*

Essentially, in order to determine appropriate stocking rates the management system needs to be specified (Bell in Dijkman, 1996), or at least consider both livestock production and vegetation condition objectives. As we have seen, in non-equilibrium ecosystems the notion of a correct CC is too restrictive and the maintenance of a steady balance between the number of livestock and available feed is not the most favorable objective for resource-users. Instead, it is better to incorporate more flexible and short-term responses to environmental dissimilarity. This, ideally, should be undertaken with a more dynamic concept of CC based more on local orientations. It would also necessitate a participatory monitoring system (involving primary stakeholders) and

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rather than animal grazing. Further, it is argued that, *ipso facto*, overgrazing does not cause desertification or grassland degradation. Instead, these are part of a natural process of vegetation decline and growth in response to rainfall, which ruminant numbers simply follow.

Plant productivity must take into account concerns such as variability in seasonal plant (re-) growth; local practices (grazing patterns of different species, succession of flocks on a given pasture); the utility of 'mathematical extrapolation' in a highly variable landscape; ecological features of long cycles, and assumptions based on livestock-vegetation equilibria 'where no such equilibria exists' (Humphrey and Sneath, 1996: 9n).

rapid adjustments to stocking rates (Abel in Hocking and Mattick, 1993), which herders traditionally have been able to do in response to climatic and seasonal changes.

Aside from its technical failure, there is increasing criticism of CC for its high cost of enforcement, as the Chinese Government is finding out in Inner Mongolia. The Anxin Project has been looking at management alternatives with primary stakeholders (patrilineal herding groups) rather than imposing – even coaxing – uniform exogenous management scenarios in diverse settings. At the very least, there should be a rational compromise between so-called ‘sensible’ CC estimates made by outsiders (grassland scientists) and vernacular definitions.

External knowledge is consistently considered more valuable than local wisdom and realistic ‘best possible practice’ in modern management should include ‘culturally-informed’ and ‘praxis-oriented’ ecological knowledge (Sullivan and Homewood, 2003: 33, 38). Therefore, planning must consider local knowledge that has enabled communities for generations to respond to ‘subtle environmental cues’ (Williams, 2002: 204), though arguably the ability to respond nowadays given policy constraints is increasingly variable and often largely ineffectual (Longworth and Williamson, 1993: 313). If an alternative approach combining both science and local wisdom is not used, as the Anxin Project argues, there will be no longer-term and community-agreed commitment and responsibility toward natural resource management.

All ‘experts’ in Phase One gave little trust to communities for self-policing the commons and emphasised imposed models based on CC under external policing regimes using a system of penalties<sup>21</sup>. Not surprisingly, this turned out a failure. Existing models were criticised as being either too conservative (the blame falling on Chinese grassland specialists) or too flexible. As one 1999 report noted, if too flexible, ‘there is a great risk that livestock numbers will not be reduced in poor season as is the case with the present common grazing system’.

It should also be remembered that herders see their grazing animals as investment or ‘banks on the hoof’, and importantly as (life) insurance for the long, harsh winters and early spring months during which time they will maximise numbers<sup>22</sup>. Sneath (2000: 255) likewise commented on the logic of pastoral household economics whereby herders constantly seek to increase numbers and sell fewer when prices were high enough to meet domestic demands and reluctantly sell more animals when prices were low. This is the antithesis of modern economics whereby high prices are assumed to stimulate higher production. During the long cold season, children of poor herders sleep with the newborn lambs to keep them (both) from freezing to death. From a scientific point of view the reduction in livestock numbers would certainly solve the problem of deteriorating herbage biomass, but – as mentioned earlier – it so happens to be a total and only way of life for many grassland dwellers. Alternatives livelihood options need to be considered carefully.

Traditionally, herders have long enclosed parts of the grasslands as a means of controlling grazing and relieving temporary grazing pressure. Here, the enclosures were relatively small compared to the open grasslands and herders were able to regulate rotational grazing and rational

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<sup>21</sup> Essentially this was spot fines or the confiscation of animals by Grassland Monitoring Station technicians. It failed because the technicians would not and/or could not get out policing the commons.

<sup>22</sup> Thus, on fragile ecosystems socio-cultural considerations and social assessments are now recognised as important by the World Bank (*Environmental Assessment Sourcebook* 1991, chap 3, p.1), which ostensibly acknowledged the ‘close relationship between the way of life of a group of people and the resources they exploit’.

resource-use under organised community management. However, currently enclosures under the User Right system function under a far more ambitious scale and intensity, supported by state and international interventions (Williams, 2000; 2002: 119-120). The official project position (as detailed in the 2002 Project Design Document) reflects the level of understanding on enclosures that emphasises a taken-for-granted need for all out regional privatisation in the grasslands (an impossible feat in any case).

The implementation of enclosures and grassland User-Rights promoted by both the Regional Government and the project has ignored the socio-cultural and geo-political context of herding and non-herding communities living in this region with some far reaching consequences. These consequences include tense and occasionally violent community and administrative boundary disputes involving family members and among neighbouring households. Where once people shared common resources they are now encouraged viewing these same resources as belonging to individual households. The larger herders were also encouraged to erect stock fences demarcating these individual allocations; this was an important symbolic strategy and Phase One had even brought in an Australian 'expert' to show how to make concrete fence posts. Those households allocated good land and adequate water sources were obviously pleased with their lot; others obviously were not so pleased but accepted the outcome at the time because of the apparent random nature of the allocations which they accepted as providence.

In 1996, households were issued with 30-year User Right leases with areas defined for households on a 6:4 ratio (household human-animal numbers); obviously, households with both large families and large number of animals received larger initial allocations. But, smaller and politically well-connected households with large herds received priority. So, although this formula was well accepted considering the disaster of the earlier grassland open-access People's Commune system, it was reinterpreted at administrative village level to suit these rich herders. For instance, radically, in one county the local government had reversed the regulation from a ratio of 6:4 to 4:6 then even further down the scale at the more isolated rural townships it was changed again to a flat 100 per cent based on livestock numbers alone.

The ramifications are obvious: those with larger herds (the local cadres in particular) did very nicely out of the deal, while households without ruminant animals (for whatever reason, historical settlement, seasonal disasters, financial crisis, etc.) who want to have grazing livestock one day, and are currently dependent on marginal cropping, lost out. In the past decade or so, after these poor households managed to purchase a few animals, there were no pastures available and conflicts started to emerge as a consequence. In other more densely populated areas grassland regulations were interpreted in favour of community responsibility and group herding priorities rather than separate household allocations.

According to the National Grassland Law (1985), amended in 2002, the allocation process involves the drawing of lots from a public ballot. This seems to have been carried out in most cases, but a significant problem emerged because of the changing composition of families over time. The increasing conflicts among extended families and kin groups in the project area are the result of intensification on allocated grasslands and subsequent land fragmentation. There is no more open frontier and boundaries are now inscribed over administrative and natural villages. In these patrilineal households sons marry-in and then with their own new nuclear families want to establish their own homesteads requiring separate allocations within existing household User Right boundaries. User Rights were originally allocated to households on conditions at the time of issuance (household size/number of animals - in some villages one determinant factor privileged the other and had to be changed by the village committee). In some project villages,

people were disgruntled because in pre-revolutionary pastoral society they could more flexibly deal with changes that affect resource access than in the new enclosure environment.

During Phase One a somewhat more reasoned allocation formula was instituted on the basis of a 7:3 ratio based more on likely future demands in a large household. But there was no community development work undertaken in its demonstration sites to prepare communities for these changes, or in strengthening the negotiating position of women and the poorest quartile. All households were then given User Rights certificates indicating the size, location, topography (based on GPS readings without informed community consultation), domestic boundaries and a scientific formula for calculating s/CC. In a 2003 consultancy report made by a Chinese anthropologist<sup>23</sup> it was mentioned that this was not successful because implementation was based solely on an ideal government favoured top-down 'road map'. Local 'maps', which incorporated local cognitive spatial knowledge, were never considered. These were later used in the current project as counter-maps using Mongolian natural place names, as means of empowerment for local resource users (see also Poole 1995, p.2). The earlier project design did not take into account local socio-cultural conditions, emergent differentiations, and existing land resource use. It is clear that when User Right maps were initially drawn under Phase One there was little understanding of lower level community dynamics.

A further complexity was not seriously considered, though acknowledged as a problem during Phase One in 1998: that of the persistent use of local resources by outside grazers. In the first year of the current project, 2003, it was found that in one demonstration site there were more than 50 squatters with about 20,000 sheep using communal grassland. Further, these outsiders were connected to influential persons in government or had family links to local Party leaders. Some of these illegal farms are also extra-income generating activities belonging to government agencies (including one property belonging to the former head of the Animal Husbandry Bureau). In fact, many of these squatters who had been grazing for more than ten years signed a land lease agreement with rural township committees, who continue to receive rent, though these arrangements are not allowed under state law. They should of course never have been allocated grazing land. In the proposed grassland reform, the distribution of household User Rights based on formal government boundaries does not take into consideration land already used by these squatters.

Better participatory field research would have revealed the extent of this problem and through consultative processes define ways of dealing with it. Because these squatters do not exist on official maps, land actually utilised by these squatters was simultaneously allocated to local herders. The legitimate User Right owners are now unable to graze on their own grassland. To pacify the grievances of these small herders, local leaders (receiving rent from the squatters) then had to allow them the right to graze their animals on other allocations. Then, to complicate matters further, not all grazing-land was open to use by these disadvantaged herders because much of this had been duly fenced with the assistance of the project's earlier interventions.

The project area has some unique features that should have been considered in initial User Right allocations, such as close and complex interweaving of cropping/gardening and grazing practices. Replication of User Right models designed in Phase One needed to consider local variations in farming and land use practices between villages. It has also been found that grazing boundaries in pasture areas, unlike cropping boundaries are consistently contested and an attempt to reduce communal pastures may have some unforeseen consequences. The original household allocations

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<sup>23</sup> Dr Zhu Xiaoyang, Department of Sociology and Anthropology, Peking University (2003 Report)

were improvised, based on historical conditions at the time; simply put: individuals/households cannot 'get richer' as easily now – unless of course they were rich at the time initial allocations were made (that is to say, a few households were already allocated the best land).

In 1983 an earlier version of User Rights was implemented in the project area to sub-village groups/patrilineal groups; then in 1997 this was issued to each household as a written contract based on boundaries defined by landscape features, such as mountain ridges, trees, water courses, grave sites (at a time when people were allowed traditional burials in the grasslands), etc. Local government grassland regulators and the village head would determine these boundaries, which today are sometimes hard to find as landscape features change or were not so clearly defined in the original assessment. In the past few years with land fragmentation due to individual allocations families are more sensitive to boundaries.

This problem has been exacerbated by the government's extensive fencing program, which has gained momentum in the last two years after trials in Phase One. In some cases this seems to work around less intensive or concentrated areas and where broad community agreements have been reached. However, in general there is no longer any elasticity as fuzzy boundaries enable more fluid arrangements for resource-use given the patchy nature of grass and water sources. Indeed, in the project area group herding has long been practiced, but is now seen as a problem because of household-level allocations pitting family against family, and household against household.

The notion of "fuzzy" boundaries in post-socialist societies has been explored by Katherine Verdery (in Sturgeon and Sikor 2004) with similarities to the complex nature of property relations and use rights in the decollectivisation period in Inner Mongolia. Here, land ownership, identity, and social relations were left in a confused condition after the regulation and discipline of the state collective period. This left considerable room for manipulation by local elites who speedily asserted control over productive pastures or the processes allocating them.

Monitoring Station regulators are constantly trying to resolve land disputes. The main resistance to any further readjustments comes from rich herders who were initially given generous exclusions a short distance from the village and who have already fenced pastures; they use these pastures as hay fields (aside from the fact that earlier, pre-grassland User Rights allocations of hay fields were given to all households in the early 1980s) and occasionally as exigency for winter-feed. At the same time, in a win-win situation, which has skewed resource allocation heavily in their favour, the rich also continue to herd their animals on the community commons (see also Williams, 1996: 309). It is the poor households who have no voice; neither do they have an understanding of their new use-rights, as they are constantly under social pressure to sell or transference the rights to their pasture to 'more productive' and efficient larger herders (see official project quotation at the beginning of this paper). This is part of what the government refer to as a "transference right", which is now implicit in the new Grassland Responsibility and Management Certificates issued to herders who meet the criteria for allocations.

These few greened, fenced enclosures belonging to the rich that were simultaneously used as low-risk demonstration sites in Phase One were promoted at the expense of the larger regional ecosystem, putting greater pressure on the extensive grassland commons. This was a serious omission by the original project design team and has led to a significant rethink on the impact of the implementation of User Rights for the current project.

Market forces were expected to sort 'productive' users from 'non-productive' resource-users. The project, although directed in the original Project Design Document to target rich herders, has to ensure equity and protect the interests of the poor, who were disadvantaged in the earlier project's 'pro-active procedures' to speedily transfer User Rights from these 'less productive' (those with few or no livestock) and 'less fortunate' (those too sick to work the land) households to rich, larger herd-owning households. The grassland and its natural resources are the only real assets for poor herders. The livelihood alternatives for them are few and far between. Phase One stipulated in its procedures and methods for allocations that transference from the poor and the economically disadvantaged was an 'important mechanism for rationalising ownership of the total resource into more viable holdings, and for allowing large livestock households to obtain additional grazing land to match SCC with the number of livestock they own' (AE/PS *Completion Report* 2001). However, in the current project's view, transference should be an option rather than a prescribed procedure acted upon the hapless, poorest quartile. The counter-argument to the support for the rich proposal made in the original Project Design Document was eventually agreed to by the funding agency and adjustments made accordingly in revisions. The consultancy report by a Chinese anthropologist mentioned above also noted that the implementation of User Rights was naively expected to solve the problem of degraded public pasture. The government policy makers assumed that, firstly, herder/farmer decision-making and resultant action would be entirely rational from their point of view (not from actor perspectives); secondly, once the communal pasture is 'privatised', households without livestock would transfer their user rights based on (fair) market price (this did not, and is unlikely to happen). However, little attention was given to the effect on dispossessed households; this was not a concern in the government's User Right Policy formulation. As a result, rich herders who have the most animals, and who it is assumed will take better care of the grassland and its resources than the poor, smaller herders would eventually possess most or all of the commons. There was no contra research presented to policy makers and funding agency to show clearly that it is in fact by no means as clear-cut as this neo-liberal assumption makes out. There is considerable evidence to suggest that a combination of rationalisation with individual households and community self-management over natural resources may be a better option.

It is clear that appropriate processes in determining User Rights based on government policy incorporating local contexts and experiences need to be developed and is a current priority for the project. Many villagers are anxious about household level allocations and many see this as inevitable conflict. They also feel that this would not work and have suggested instead a group responsibility arrangement involving four to five households. Individual poor households – even with User Right allocations – are not strong enough to negotiate with rich herders (for instance over cutting hay). It is the rich herders who dominate the pastures and would like to have even larger pieces of the fragile natural resource pie. Based on customary practices of co-sharing, poorer herders even argue that everyone has the right to use the commons so they cannot and do not want to charge a fee (as proposed) to rich householders for services/use of natural resources that they have been allocated.

In fact herders have adapted User Rights to suit their own realities and, as research has shown in one pastoral community, it makes little difference whether this was distributed to individual households because people still graze their animals freely on the commons. In the opinion of these villagers, the pasture has and will always belong to the community. Collective control has been exercised on the hay fields since the system of contracted responsibility was implemented whereby every household sends a person in turn to look after the hay fields and keep all livestock out. The community claim that fences are not necessary.



The traditional grazing arrangements maintained sharing of the commons and rotational grazing to avoid degrading a certain part of the pasture by concentrating all the animals in that area. Each spring, every family sends a representative to attend a meeting to discuss the grazing place and direction in the coming year. Usually kinfolk and their relatives graze their livestock in the same locality or direction for the convenience of mutual sharing. After discussion and a final agreement, free grazing will be endorsed in the given area instead of individual cross-direction grazing. All the households take responsibility to monitor each other.

#### *POVERTY, DIFFERENTIALS, AND DEVELOPMENT*

In most poor project villages around 30 per cent of households now depend largely on marginal cropping (maize, with some soybeans and sunflowers) and have few or no grazing livestock. However, some of these were traditionally farmers since post-collectivisation, while others small herders who lost their animals now resorting to cropping for a living. Some of these households may have only a few chickens, geese, and the family pig – kept usually only for ceremonial purposes such as weddings or funerals. Additionally, many households are in serious debt after three years of bad harvests. In 1999, at the end of Phase One, loans were hastily disbursed not so much on broader household needs as wants, and without having established any community organisation or network support mechanism for poorer households. The rich households were given loans for such things as fence-wire and improved breeding stock and much of this has not been re-paid and now written off as bad debt by the Australian funding agency.

Extension agents based at the County offices and the Animal Husbandry Bureau field stations did not have either the resources to work closely with these impoverished households and instead, in Phase One of the project, spent much of their time with Australian agricultural experts who were concerned with establishing ‘model’ herders and demonstration ‘exclusions’ – which in any case largely failed, especially the introduced perennial grasses unsuited to the ecological conditions. The new project, which came about because of funding review criticisms of the lack of participation in Phase One, has to find a means of addressing the real life concerns of primary stakeholders – communities consisting of both herders and non-livestock owning households. In general though, most grassland management and pastoral development projects have failed to take into account local perspectives and cultural practices, fixated only with achieving ‘best practice’<sup>24</sup> (rather than the more desired ‘best possible practice’) based on Western orientations (see Ahmad, 1998: 7).

According to Han cultural practices, land that embodies no labour has little or no value and is only barren wilderness (Williams, 2002: 203). At the same time the State Council recommended a ‘conversion’ whereby cash incentives are offered to farmers in marginal croplands (avidly promoted in the cultural domestication of the countryside thirty years ago) to return these to pasture and monoculture forest, ‘mobilizing the enthusiasm of the masses’ (‘The State Council’s opinions ...’, 2000, No.24). These days, the ‘masses’ are a differentiated and much less

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<sup>24</sup> In most fields of management this refers to a method or technique based on experience and research that has proven to reliably generate a desired (and sustainable) outcome. A commitment to ‘best practice’ in any field is a commitment to using all available knowledge and technology to ensure success. It is used frequently in development project management as a largely imaginary goal post, where few actually know what it means other than as a desired outcome.

complacent lot and would have little enthusiasm for state plans that do not include risk minimalisation, or offering direct improvement in livelihoods.

The landscape, which constantly invokes a sense of place, co-linking identity, imagination and specific set of practices to a location, is changing quite rapidly under pressure to impose techno-scientific management on the commons as part of the grander constructionist vision of 'engineering' the natural environment – a mastery over nature (and indigenous values) – something the Chinese have long been particularly adept. Resource-users seem to be increasingly caught in a changing life world, one that has very few options and that gives them little control while increasing impoverishment (see also Williams, 2002: 175). In the project, relative poverty has increased 20 per cent over the past three years due to both natural misfortunes and misplaced, poorly directed planning.

In the project differentiations were not directly a concern in the original design activities, but as the project showed in the first year, access to pastures is skewed and has to be resolved to avoid increased tension and over-exploitation of common-pool resources<sup>25</sup> (beyond the ecosystem's ability to recover from sustained heavy grazing) where the grassland is not an object but is rather a social relation that defines the resource user with "respect to something of value (the benefit Stream) against all others" (Bromley 1992, 4).

This also means addressing poverty through noting differences and making inversions where necessary. Extensive Participatory Poverty Assessments were undertaken in the first year and community-generated base-line data established. This new participatory interventionist culture, one that is driven by primary stakeholders (resource-users and not scientists) was not easy to accept at first for a government bureau used to giving directives and acting on local communities. Even local communities felt a little uneasy about the prospect of grass-roots participation in activities so the first year was mainly devoted to awareness-raising and micro-level capacity building. Extensive adapted 'future search conference' workshops set the tone for agreed culture change and collective vision. But, as one rural township cadre commented when it was suggested that the project work more with local herders' knowledge, 'but these folk know nothing! [Of scientific value] - Why ask them?' Participatory processes in planning and community action clearly have a long way to go in the frontier of northern China.

The local project management staff were surprised when we insisted on talking with the failures of the deal in Phase One ('what failures?'), the poorest quartile, non-herd owning households, women, communities with a history of conflicts over boundaries, villages that are hard to reach from the main road. An attempt was made to redirect our attention to nearby model households/communities established by Phase One. The 'village meetings' documented in Phase One were attempts at preparing communities to 'receive' interventions rather than give people a voice. Language used in earlier documentation is directive. For instance, it was mentioned that the project 'aims to develop sustainable mechanisms for grassland conservation... (this) requires that the individuals and communities which reside and rely on these grassland resources are supportive and responsive toward Project aims and activities' (*Community Development Completion Report* 1997). This begs the question: how does one make them responsive towards project aims and activities? Hammer them into submission? Neither was there any insistence on ensuring the participation of women at these village meetings as communication was directed to men through the patriarchy of formal institutions. Clearly, if given a primary role, women would have a positive impact on sustainable natural resource use and biodiversity protection (Foggin

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<sup>25</sup> On common pool resources (CPR) see Acheson (1989), and Ostrom *et al.* (1999).

and Smith, 1998: 7), evidence by the increasing participation rate of rural women in the first two years of the new project.

One of the most important changes to have taken place as a consequence of User Right policy on people's lives relates to increasing wealth differentials. In the project, poverty has been linked to differentiations generated through earlier interventions. For instance, in one rural township area consisting of 1,200 households, 1.7 per cent of the households now own 38 per cent of the total number of goats. Socio-economic base-line data, combined with data on poor households from the *Census of Agriculture* in combination with the *Household Income and Expenditure Survey*, should have been generated in Phase One for monitoring and evaluation purposes and for more effective direction of programming. Even existing data could be used for instance in assessing food security needs (see NBSC, 2002). An early agricultural 'Baseline Survey Report' (1996), even stated that its samples 'did not adequately represent households without grazing livestock'. In the project area these non-livestock owning households constitute the poorest quartile.

As mentioned earlier, the enclosure of grasslands under User Rights has been found to hasten disparities between households leading to serious social problems and community fragmentation (Williams, 2000). Furthermore, it is important to see how and in what ways this is connected to exogenous eco-management of the grasslands (articulated in top-down policy) rather than one incorporating adaptive vernacular knowledge<sup>26</sup>. A techno-scientific solution to a predominantly socio-cultural ecological problem undermines the stock of social capital among these communities and in some cases even leads to outright community conflict (see also Williams, 2002: 152-6).

Indeed, even in the model County of the Anxin Project, an estimated 10 per cent of conflicts among householders over User Right boundaries can no longer be resolved through local mediation and end up in court in the nearby prefecture city. There are no statistics for the number of inter-household conflicts that are handled initially by the rural township committees, or at the next stage of conflict resolution, by special sections in the Prefecture Animal Husbandry Bureaus, one of the busiest work units in the bureau.

Perhaps based on the assumption that science has all the answers, grassland technicians, including Australian experts in Phase One, assumed that field experimentation conducted under controlled conditions could and should be replicable in any setting. Naturally, long fallows will restore critical biomass through regenerating pasture species. In the project area special conserved areas are already being set aside under government regulations. But in the interim (especially in densely populated areas) where and how are livestock to be grazed, or how should households coordinate rotational grazing, or acquire the means to turn sand dunes<sup>27</sup> into productive pastures? These are questions that need practical answers with timely participatory research methods in the context of non-equilibrium ecological settings.

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<sup>26</sup> For example, Daniel Miller (n.d.) commented on the 'hope that the vast indigenous knowledge herders possess will be better understood and used in designing new interventions. Greater awareness of the need to understand existing pastoral systems should also help ensure that the goals and needs of pastoralists are incorporated into new programmes and that they become active participants in the development process'. Elsewhere Abel (1990) states the obvious that it is important to consult with resource-users whose vernacular knowledge of their own production environment is far superior to that of the grassland scientist. Local knowledge from pastoralists could be in climate, soils and geomorphology, plants and vegetation types, water, livestock, wildlife, and measurements systems (time, distance, volume and weight), (see Harris 2000).

<sup>27</sup> Which in fact herders believe to be much more resilient than scientists assume (Williams, 2002: 183)

In order to tackle grassland degradation we need to firstly understand the nature of the problem itself, establish bases by which scientists and resource–users can agree, while encouraging mutual respect for various viewpoints. The project decided to make inversions to earlier interventions by starting from the basis of local perspectives and vernacular interpretations. It found that herders' views are certainly reliable in relation to local systems, even if they were not informed so much by considerations of the sustainability of modern production systems (see also Humphrey and Sneath, 1996: 9).

A micro focus would shift the emphasis to privileging local experiences, viewpoints and sentiments toward collective management of common property resources. In this instance, social factors in ecosystem dynamics will have the attention they rightly deserve in policy-making and new synergies formed. Even with the many variations of endogenous common property regimes, it is necessary to ensure that there is supra-local supportive mechanism in place (Banks, 2001: 724).

Common property regimes are certainly a better alternative when more intensive resource use multiplies externalities between enclosures, increasing collective agreement on restrictive land-use rules. It also ensures easier collective monitoring and enforcement of those rules (less time and lower transaction costs). Assuming that natural resources can be neatly parceled, the administrative apparatus necessary to enforce individual property rights is not in any case available. The project is starting to realise that in some intensified areas it is more cost effective and culturally appropriate to institute collective management rules (as imaginary rather than real 'fences') and support customary mechanisms for dealing with use-conflicts. It is possible to incorporate common property regimes as part of an overall Community Development process whereby resource management rules can be included on to the functions of a pre-existing community organization.

Ho (1996: 7) suggests that, as the household User Right system is now so widely instituted it would be hard to establish common property regimes under the sole control of local communities. However, there is increasing recognition among scholars and some government officials that the implementation of the pasture contract system may not be so easy to bring about. A number of these government workers are starting to consider that the responsibility of management and control of the commons should instead be vested in local collectives (Ho, 1996: 10). Thus said, it is clear that the government, with encouragement from multilateral and bilateral funders, is committed to further privatisation and economic rationalisation of the commons in the foreseeable future.

To be effective, the implementation of User Rights implies a strict set of regulations and its enforcement from the state instrumentalities. This has enormous resource implications and would not be easy to implement in the sparsely populated Inner Mongolia grasslands. The alternative, as Foggin and Smith (1996: 5) suggest, is to deal with the institutional framework supporting local pastoralist. Here, they correctly assert, policy needs to entrust the responsibility for management and monitoring of the commons to resource users themselves, necessitating the establishment of an appropriate and responsive institutional framework. As Ho (1996: 21) found in Ningxia, User Rights cannot be effectively enforced by outside agents as the area is too large and field agents too few. Ho quotes from a local cadre:

The grassland is too vast, and the police force<sup>28</sup> too small in order to make the law effective. No, instead of a rangeland management enforced by the grassland police, we need to organise the farmers to manage the grassland by themselves, to enforce rules of grazing by themselves. (Ibid.)

Taking this one step further, even better would be to encourage local resource-users themselves to actually (re-) define their own grazing rules based more on local knowledge and customs. As Harris (2000) said, herders can provide important information in regard to grassland and fodder crop production and the occurrence of forage deficits. As found elsewhere among traditional pastoralists, the attempt to impose sustained high levels of control from outside has been resisted (see Perrier, 1990: 4).

The variable social, economic and agro-ecological condition between counties, rural townships and villages in the project area indicates a need for an adaptive grazing strategy able to permit seasonal and *ad-hoc* animal movement and maintain an overlapping grazing strategy. In this context, traditional vernacular responses to such ecosystem demands may be the most appropriate. This, as Foggin and Smith (1996: 5) note, presents a challenge to some of the important priorities in the 'current drive to 'modernise' the pastoral economy'.

The project is an attempt to modernise the pastoral economy in terms that are defined by local resource-users. This means refining the conventional policy making process to ensure that there is a sustainable institutionalised feedback mechanism in place where both herders and marginal non-herder households can inform policy makers. Information also needs to move upward. The implications for this inversion are obvious: If local people are going to make a difference in transforming an environmentally degraded landscape, they must see this as a problem first, and then have some control and responsibility in the management of their natural resources.

However, there are two caveats: Firstly, as Williams (2002: 207) remarks, recent historical memories of violence and personal loss limit the ability of herders to provide necessary feedback to policy makers. Secondly, in Chinese law, collective ownership is far from being clearly defined (Ho, 2000) as land tenure, or responsibility contracts for land use, has created insecurity for too long (Williams, 2002: 47). In the project area, grassland User Right is given to households for a period of thirty years but, if land is not used according to the original contracts, this can be revoked. Importantly, as currently understood, pasture contracts are not a voluntary agreement between two parties, instead a duty imposed by the state on the village and the farmers (Ho, 1996: 6). Thus, as Ho continues, neither administrative bureaucrats nor farmers/herders consider pasture contracts positively; as one householder remarked 'the pasture contract system has not been invented by us. All these problems and boundary conflicts...Times were much better when the land had not been allocated to the individual users...' (Ibid.)

Essentially, in focussing too much on overstocking to the detriment of other considerations, and without clearly defined property rights in the grasslands (legitimate concerns by themselves), policy makers and technical specialists have failed to understand the complex ecological, social and cultural dimension to rangeland degradation. As well, projects such as Anxin have attempted to impose a high level of definition and control over natural resources as a necessary good for improvement in grassland management, which involves significant costs. Lower levels of control – suitable for communal grazing lands – could mean that households themselves define grazing

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<sup>28</sup> Correctly, these are regulators (grassland specialists who can impose fines) from the local Grassland Monitoring and Management Stations under the Animal Husbandry Bureau.

practices, boundaries, group membership, and regulate the use of resources by outsiders ([‘squatters’] Perrier 1990: 4).

The attempt in Phase One to impose high level control suited more for private land use and environmental regimes such as penalties for breaching assigned stocking rates was doomed to fail from the outset. At the very least, as two Australian agricultural scientists acknowledged from work elsewhere, this approach is plagued with ‘major deficiencies’ (Longworth and Williamson, 1993: 84). This would explain why herders might have felt that they have good reason for non-compliance (Williams, 2002: 211) and even active resistance to imposed grassland science (Ibid. 194-5). The project has approached this problem by ensuring proper stakeholder participation, using a step-by-step consultation process, getting bigger pictures perspectives (plural) and jointly agreeing on an implementation regime. This emphasis on process and consultation takes time – something that the original design of the project had not considered in its drive to achieve productivity outputs.

#### *OFFICIAL DISCOURSE AND THE DILEMMA OF FENCES*

In Inner Mongolia, around two-thirds of total useable grassland has already been assigned to individual households (Banks, 2001: 718n) – though this varies considerably from county to county. The issuance of User Rights also does not necessarily mean that individual household boundaries have been established and accepted without contest. There is evidence that the contrary is the case, and with considerable confusion in this regard. In both of the two counties in the project area, grassland officials said that 100 per cent of land has been allocated under the household contract responsibility system. Further questioning revealed that this was a ‘feel-good’ paper figure sent to the Inner Mongolia regional office as grassland regulators try to please the policy-makers (see also Sneath 2000: 253). At least one senior county official was somewhat critical about the pasture contract/User Rights system and talked about the realities of village-based grassland management and informal arrangements for shared use of the remaining commons. Similarly, Ho (1998) noted the questionable validity of official claims that the contract system is in place and working. At least one leading policy-maker working with the project now admits the failures of the current system and local realities to implementation. This has meant that the project can feedback these realities to policy-makers as policy formulation is continuing being adapted, especially in relation to semi-pastoral conditions.

The perduring uncertainty and inconsistency of state regulations and policies over land tenure in pastoral areas have had negative effects on households. Grasslands are contested spaces in a mutable landscape that do not accord well with Han notions of a domesticated and regulated spatiality demarcated by neat fences and stone or brick walls – constructed around houses, home gardens, pastures and field crops. Fences are part of the rationalising discourse of modern livestock management and a main management tool used in dry pastoral environments (Sullivan and Homewood, 2003: 35-6). Before fences appeared in the project, community boundaries were permeable cooperative arrangements defined, as mentioned earlier, using natural landscape features. In these situations, although confusion has been caused by the redefinition of unclear boundaries now necessary for the allocation of User Rights, people at least feel less restricted in movement than by the imposition of fences. During the season of use, herders, especially those with pasture close to the village boundary, are able to monitor and enforce village boundaries with little effort. The greatest threat is during out-of-season use of pastures during the spring-autumn and winter from farmers/herders outside the community, in neighbouring villages. However, even in this case, under village leaders, communities are able to establish a rotation using community volunteers to ensure that these pastures were effectively protected from encroachment (see also Banks, 2001: 728).

Fences that were promoted in Phase One were mainly established for the use by richer, larger herders given grassland exclusions outside the village. Fences criss-crossed once open pastures and transformed community natural assets into contested new value domains. Williams (2002: 143) noted that increased rural wealth differentiations (worrying for both the state and the local community) can partly be blamed on the proliferation of fence wire post-collectivisation as this constituted *de facto* unequal access to important local resources. Although, as mentioned earlier, herders have long enclosed a part of the commons under temporary grazing pressure, this was limited to certain campsites and certain times of the year, especially through the winter and early spring (Williams, 2002: 118). The way in which herders achieved their rights was through first-use principle and the establishment of landscape structures such as a well, dwelling, burial site, or animal pen. In the past herders would not use structures they had not built (Ibid. 135, 137). In pastoral areas elsewhere it was similarly found that pasture degradation was caused not so much by overgrazing and livestock densities, but by 'government interventions such as fencing' (Behnke and Scoones, 1993a).

The impact of the User Right enclosures meant that barbed wire fencing came to symbolise a new notion of a traditional built structure, one that historically entitles newcomers to special rights. However, in some cases these fenced enclosures 'now exceed the limits of a reasonable claim' (Williams, 2002: 137). This at least partially explains why richer households in the project have been able to coerce their neighbours with expanding enclosures with so little organised resistance. It also explains why poorer herders said they want to mark their own claims to land through fences made from any locally available materials until they can afford fence-wire, or until such time that they are entitled to some of the government's generous fencing subsidies. In other words, it is easy to see why the intrusion of new technology like fence-wire could so influence social realities on the ground to gain such powerful local meaning (Ibid.). Prominent Han Chinese agricultural economist Wang Jimin (2003) for instance never disputes the need for fences; he only bemoans their lack of 'standardisation' in pastoral regions.

The scenario emerging on the grasslands is that the imposition of unworkable regulations has increased exploitative land use practices, and in the late 1980s those with the means to enclose land were encouraged to become the rightful occupier. This is a first-use principle mentioned earlier for those with most power. In fact, as found on the Anxin project, grassland policy has the unintended consequence of intensifying economic exploitation and irregular grazing practices (Williams 1996: 310; 2002: 205). Consequently, as enclosures expand, grazing pressure and erosion intensify and the poorest herders who rely solely on the commons become the losers of ecosystem decline<sup>29</sup>.

There is a direct correlation between the increased enclosure of the grasslands and a decrease in pasture productivity in unenclosed areas as a result of putting more and more pressure on a shrinking, ever more fragile and constrained land base (see also Williams 1996: 311). This is also combined with unrealistic imposed stocking rates as mentioned earlier. As Hinton (in Williams, 1996: 311) also noted across Inner Mongolia, while possibly not agreeing on the cause(s), herders expressed concern that grazing was worse than in their childhood. In one community on the Anxin Project, old folk recalled times in their youth when the grass was more than 1.5 metres high and they could not see each other when riding horses across the steppe. That was fifty years ago when the population was 50 persons and is now over 600 hundred, and when the sheep numbers were 1,000 animals, and are now over 20,000 animals with the herbage height now less than fifty centimetres at early summer. At that time there were numerous clear streams running down from the mountains, and the water table now is getting lower and lower.

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<sup>29</sup> See Williams (2002: 138); Sneath (2000: 254); and Sheehy (1993: 17-30).

Indeed, the trend towards private enclosures is a definitive problem rather than a solution to sensible grassland management where some mobility and flexibility are required even within the limited space available today (Banks, 2001: 737). Especially in drier areas, this restriction has resulted in considerable damage to the long-term sustainability of pastures (Schwarzwalder, Li, *et al* 2001: 5).

It is essential, as all social scientists note from recent work among post-traditional pastoralists on the grasslands, that land tenure systems are tailored to local conditions; that they are adapted to meet the needs of resource-users under specific agro-ecological conditions. In the project, government regulators are starting to realise that flexibility is essential in the distribution of User Rights to individual households. It is clear that standardized systems of land tenure in China are unlikely to be successful given its diversity (Kung in Banks, 2001: 20). For instance, as in allowing group herding arrangements and (limited) community management over local resources, especially in severely degraded and densely populated areas<sup>30</sup>, rather than blandly following exogenous government prescriptions.

#### *SUMMARY*

Based on preliminary findings at the beginning of the second year of a four-year project and extensive relevant social research undertaken elsewhere, there is a clear need to re-centre the community an integral part of the biotic community (and not grasses) in grassland management, especially so as this involves people's livelihoods and land tenure arrangements. An uncritical over-dependence on exogenous management tools such as CC and specific technical interventions to what is community-based institutional problem will generate more problems than actual resolutions (see Banks, 2001: 738).

This paper argues that User Right Grassland Policy, as we have it at present, has actually accelerated the decline of the grasslands contrary to its original purpose. Privatisation of the commons through a system of enclosures is not going to work given the sparse and *ad-hoc* availability of natural resources, the severely degraded soils and the corresponding increase in population, and enduring customary herding practices. The long-standing practice of group herding is a positive attribute in grassland conservation. It indicates the existence of important social capital whereby herders can act collectively (with both near and distant pasture grazing) in regard to common property resources provided appropriate meso-level policy is in place that is able to respond flexibly to local conditions. In this regard, seasonal, limited-range rotational grazing under community-defined management rules may offer the best prospects.

For those living on the grasslands and depending on its fragile ecosystem for sustained livelihoods, there is little choice – even seasonal or permanent out-migration. Marginal non-herding households make optimum use of the commons for raking up what little dry herbaceous material exists in the spring, collecting dried manure, and in some mountainous areas collecting various edible green foods and medicinal plants for sale. In the project area health is a serious concern with high morbidity rates. It also affects ability to work as one poor herder remarked, he has arthritis, his wife is sick from TB and he has to take care of three children and one elderly parent. If he needs additional support during peak labour times in his cropping land he must pay for this. Traditional labour-sharing, which used to widely involve clusters of two to five households, is still organised in some of the more isolated communities with patrilineal kindred, but varies widely from village to village (see also Williams, 2002: 96).

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<sup>30</sup> It is clear that there is at least a (negative) relationship between population density and biodiversity (see Foggin and Smith 1996, p.7).



Essentially, interventions need to be redirected at reinvigorating social capital among pastoralists and non-herding households, strengthening social networks and encouraging greater self-reliance and local control over resources. As this paper suggests, grassland resources are not equally accessed under household User Right allocations. In order for the Anxin Project<sup>31</sup> to make a real impact, it has to concentrate its limited resources not towards ‘models’, the large herder households as in Phase One, those with most political shout and clout, but among the more marginal actors and losers of the policy deal whose voices have yet to be heard.

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<sup>31</sup> The project is due for completion at the end of 2006.

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