

# 4 Enabling Institutional and Policy Change to Support Collaborative Pastoral Development and Rangeland Conservation



**Cover photo:** Participatory Planning in Yushu Tibetan Autonomous Prefecture, Qinghai, PRC  
(*Camille Richard*)

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## **Enabling Institutional and Policy Change to Support Collaborative Pastoral Development and Rangeland Conservation**

Participation has been mentioned previously when talking of integrated approaches; however, many of the following presentations describe participation as a driving force in the process of development and conservation initiatives. Participation here involves not only institutional building of the local communities, but also building the capacity of government and non-government institutions to facilitate local learning processes and improve service delivery to pastoral communities that meets both local needs and those of society at large. The last two papers deal with grassland tenure policies as a basis for collaborative management, providing the security and incentive for communities to participate in rangeland improvement and development schemes. All papers emphasise that effective collaboration among local and government stakeholders requires a supportive extension, research, and policy environment that is adaptive to change and responsive to local needs, knowledge and aspirations.

Dr. Ahmed Sidhamed presented a major institutional perspective and experiences of the International Fund for Agricultural Development's (IFAD) livestock and rangeland development projects over the past 25 years. He provided an overview of IFAD's overall approach to alleviating poverty amongst pastoral communities, including the technical, financial, institutional and policy support needed to enable community-based development, with particular emphasis on enhancing the role of civil society in the development process.

Du Guozhen and Zhao Qun present two papers describing an Oxfam supported project in Maqu County in Gansu Province of China. In this project, the objectives were predetermined by the government and project staff, but participatory training and implementation have greatly facilitated success and helped to improve the participation of marginalised members of the communities in decision-making and benefit sharing.

Rinchen Wangchuk from the Snow Leopard Conservancy presented their approach to developing alternative models for the conservation of endangered rangeland wildlife, such as the snow leopard, while helping to enhance local livelihoods. Particular focus is given to the process of appreciative participatory planning and action (APPA) as a means to help alleviate predator-wildlife conflicts in pastoral regions such as Ladakh, India.

Wolfgang Bayer from GTZ presented the results of a study of participatory monitoring and evaluation efforts around the globe. Using outcomes of this work, he identified situations where participation is appropriate and the conditions necessary to facilitate effective implementation and monitoring.

Tsewang Wangchuk from the Jigme Dorje National Park in Bhutan highlighted the integrated nature of Bhutan's natural resource policies. He then presented a participatory planning process for rangeland conservation work in the park that is integrated into government planning and implementation.

Ayurzana Enkh-Amgalan from the centre for Policy Research in Mongolia described the results of a project that registered informal grazing rights of customary herding communities, and assisted herders to adopt more sustainable strategies of income generating, emphasising a holistic and participatory approach. He argued that the revolving funds provided, which were used by the communities as loans, were well used as they built capacity, unlike relief assistance.

Mohammed H. Emadi from the Iran Ministry of Agriculture presented an approach taken by the government of Iran to improving the working relationship between its agencies and nomad communities. As a basis, he emphasised the importance of helping different actors understand each other's perspectives, especially those of the local communities. He then described a series of steps designed to bring about organisational change within the Department of Forests and Rangelands to develop a collaborative learning process with local herding communities.

Li Ping from the Rural Development Institute in Beijing highlighted important policy considerations regarding tenure arrangements for rangeland (non-arable) conditions in China. He argued that tenure policies developed for arable lands are not appropriate and that a coordinated effort is needed to bring a local voice into the process of policy formulation and change that reflects the unique rangeland ecosystems and socioeconomic conditions of local herding communities.

Yan Zhaoli presented findings of an ICIMOD supported study on policy impacts and institutional training needs to improve implementation of China's Grassland Law in Tibetan areas of Sichuan Province. Local communities view the policy itself as sound and flexible but feel that those mandated to implement it are neither capable nor are they responsive to local needs. She suggests development of effective implementation guidelines that can be tailored to specific site conditions and training of government staff in facilitating local decision-making in policy implementation efforts.



## **IFAD's Experience In Supporting Community Based Livestock and Rangeland Development**

*Ahmed E. Sidahmed<sup>1</sup> and Antonio Rota<sup>1</sup>*

### **Rangeland issues**

As a result of insufficient and unreliable rainfall, rangelands cannot maintain cropping activities. Therefore, rangeland use is predominantly by livestock. Although livestock grazing is the most efficient way to convert cheap primary production on rangelands into valuable animal products, most pastoralists are among the world's poorest people. The rangelands on which these people live are marginal and fragile,

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with extreme weather conditions, low rainfall, rough terrain, high altitudes, and poor soils; as well as poor access to roads, markets, and services. Most of these rangeland ecosystems are subject to overuse, and their degradation is intensified by sharp increases in human and livestock populations.

Nonetheless, rangeland users have been persistently overlooked by planners and policy-makers, and until very recently, lack of understanding of rangeland vulnerability caused those policy initiatives that did occur to be misguided, further contributing to the instability of many rangeland ecosystems. All of these factors have combined to cause wide-scale degradation of many of the world's rangelands.

There are several historical reasons for the extreme poverty of many pastoralists, exacerbated by some new ones. Historically, pastoralists are vulnerable to severe winters and droughts. Insecure land tenure and use rights, or complete lack thereof, often lead to loss of grazing areas. The forage of some rangelands is of poor nutritional quality. New difficulties include the fact that increasing numbers of livestock are using the same limited range resources, causing accelerating land degradation. Furthermore, in this age of world markets, alternative income-generating activities, financial assets, and health and education services are not available to these people.

The consequences of this poverty and the resulting degradation are decreasing stability of the natural resource base, continuing loss of ecosystems and biodiversity, decreasing livelihood security, and sometimes conflicts or wars.

## **IFAD**

The International Fund for Agriculture Development (IFAD) is a United Nations specialised agency established as a result of the recommendations of the 1974 World Hunger Conference. IFAD's mission is to work with the poorest rural populations in developing countries to eliminate hunger and poverty, enhance food security, raise productivity and incomes, and improve the quality of people's lives through empowerment and improved access to productive resources.

IFAD searches for innovative approaches and mobilises its own resources, as well as the resources of the international community, in a global effort to combat hunger and rural poverty in the marginal and resource-poor areas of the world. IFAD's strategy is to mainstream and incorporate the interests and needs of poor pastoralists and small, mixed crop and livestock producers into their national economies. This is being achieved through strengthening of the social, financial, legal, and technical coping abilities of rangeland users. The majority of IFAD's rangeland projects are in sub-Saharan Africa, the Near East or North Africa, and Central Asia.

IFAD's most recent projects have employed multi-sectoral community-based support. These programmes include complex projects designed to support mixed communities of nomads, transhumants, and traditional farmers and often provide social services such as health, water, education, and community training. These new, advanced IFAD projects have sought integrated solutions to social, economic, and technical constraints and have formulated and enforced supportive policies and reform measures.

One example is a project conducted on semi-arid steppe rangeland in Morocco, where community-based structures were developed for the adoption of technical solutions to

reverse severe rangeland degradation. Consensus was built among the various tribes concerning how to use and improve the available degraded rangelands. Democratic and legally sanctioned 'ethnolineal' cooperatives were established, on the basis of tribal structures and ancestral rights, to control the use of over three million hectares of rangeland.

IFAD projects have also established laws enforcing incremental taxes on larger herd sizes in China, Mongolia, Azerbaijan, and Georgia. These laws reduced overgrazing and afforded poor smallholders access to common grazing resources. In addition, an IFAD investment project in Mongolia allowed for collection of an incremental tax on range use.

## **Future IFAD projects**

After learning many lessons, IFAD has developed a new participatory rangeland development programme. Under this programme, range users themselves are the focal points for development, and their coping mechanisms are the benchmarks. It is less supportive of public institutions and intensively supportive of rural communities' self-management and self-reliance. It searches for equitable solutions and establishes enabling frameworks to allow the communities most affected by environmental destruction to take leading roles in identifying and implementing possible solutions.

Institutions at both the community and state levels play crucial roles in making development projects work. Institutions at the community level are in the best position to assure full participation and benefit of all categories of herders, from the poorest to the richest. They also formulate resource management action plans, participate in negotiating the plans with policy-makers, and ensure their implementation. State and other government institutions ensure provision of minimum services and funds, as well as define and ensure the overall legal and judicial frameworks for lower-level institutions.

IFAD's experiences make it clear that any attempt to support rangeland development in the future must be built on traditional pastoralist livestock systems that focus on sustainable natural resource management, risk minimisation, and the preservation of diversity. Such development must also recognise the complexity of the social, economic, and natural factors involved. A community planning approach to the development of pastoralists fosters integration between different actors, including communities, local and national institutions, and policy-makers. It stimulates participation in steering the development process, facilitates participatory identification and transfer of useful practices, and promotes collective action on the basis of shared consensus.

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# Community-based Rangeland Management in the Alpine Meadows of Maqu County, Gansu, PRC

Du Guozhen<sup>1</sup>

## Background

The Qinghai-Tibet Plateau is the highest and largest plateau in the world. This area, with its unique ecosystem and an extremely rich rangeland resource, has been one of the most important grazing lands in the region since ancient times. The high-frigid meadow of the eastern Plateau is a central point for rangeland animal husbandry and also the origin of the Huanghe and Yangtse Rivers; it is thus called 'the mother of ten thousand rivers'. The Qingzang Plateau is the starter and modulator region for the climate of the northern hemisphere. Changes in its climate have immense effects on the climates of eastern and southwestern China, as well as on the northern hemisphere and the entire globe. Furthermore, the high-frigid meadow ecosystem has immense and unique biodiversity and animal breed resources. Environmental changes in this region directly affect the whole of China, and thus the lives of all Chinese people. Therefore, the Qinghai-Tibet Plateau has attracted the attention of meteorologists, soil experts, environmental specialists, and ecologists from all over the world.

Maqu County is situated in the region of the first bend of the Huanghe (Yellow) River. The area receives high rainfall, and soil dampness is optimal for typical high-frigid meadow vegetation. This natural grazing land is very rich in primary productivity relative to the rest of the Plateau. However, due to overgrazing and long-term improper rangeland utilisation, the ecosystem has become seriously degraded, leading to many livestock deaths. This rangeland degradation is manifested by a drop in rangeland productivity, serious harm caused by small burrowing mammals, an increase in poisonous grass species, and an increase in bare land area.

The Tibetan people living in Maqu County have historically led nomadic lives. They have used the rangeland for migratory grazing, in which a tribe or a group of herders were considered a unit, and have used different types of rangeland during different seasons. In 1982, livestock were contracted to individual families in Maqu County, as had been done in other parts of the country. After the implementation of the 1985 Grassland Law in the early 1990s, livestock were restricted to their owner's specific areas of rangeland and not allowed to 'trespass' on neighbouring areas. This has caused many problems, such as controversy over winter and spring pastures located between families and villages, lack of funds to fence land for conservation and fodder production improvement, and decreases in drinking water availability.

## The current project

The problems raised by the contracting of rangeland to individual families have attracted the attention of the Chinese government at all levels, as well as of distinguished people in various fields. The State Laboratory for Arid Agricultural Ecosystems at Lanzhou University conducted a study of these problems and put forward suggestions to various levels of government and to Oxfam Hong Kong. This three-year project, begun in 1999 in Nima and Oula townships of Maqu County, has made remarkable achievements in the social, ecological, and economic spheres.

<sup>1</sup> State Key Laboratory of Arid Agroecology, Lanzhou, Gansu, PRC

Following the mandate of the proposal by Oxfam Hong Kong, topics were selected using a participatory discussion approach. First, a survey group was formed of scientists, local technicians, and government officials. This group then approached local herders in Maqu County, discussed with them the problems existing in rangeland animal husbandry, and asked them which problem they considered most compelling. Beneficiary families were then selected through active herder participation.

During project implementation, three types of personnel training were arranged – technical, general, and herder training. Technical training focused on the characteristics of high frigid rangeland, principles of surveying and evaluating rangeland, questions relating to rangeland improvement and conservation, methods of planning for rangeland improvement and conservation, and skills for monitoring rangeland vegetation condition. General training covered participatory project management, skills for spreading technical knowledge to the grass roots level, modes of coordination among stakeholders, and transparent financial project management. Herder training covered simple rangeland management techniques, uses of traditional knowledge, significance of participatory management, and the concepts of 'equality' and 'democratic management'.

## **Outcomes and recommendations**

Popularisation of this project has had long-lasting effects on the attitudes, outlooks, and modes of management of local governmental officials, cadres, and technicians. Implementation of this three-year project has changed the working style of governmental officials remarkably, as they have witnessed the benefits of participation of people from different backgrounds in the implementation of projects. Through both on-the-spot and periodic training, technicians' technical knowledge and capacity to work with herders were also enhanced. Relations among herders have been improved in many ways by the project. For example, herders are now working together to devise the best ways to manage their particular rangeland, and poor herders are being supported through the participation of the entire community.

Popularisation of technical skills on the rangelands of the Plateau is a very complex issue. In addition to technical skills, it involves societal background, cultural customs, and level of economic development. Therefore, it is necessary to gather ideas from different groups of people – especially from herders themselves – in order to implement projects smoothly.

Some specific suggestions are listed in the following.

- Different stakeholders, and especially herders, should participate in all projects implemented on the rangeland.
- All technical measures to improve rangeland should be integrated into participatory management.
- Based on the wishes of herders, village rules for combined use and management of rangelands should be improved and utilised.
- Basic scientific research on new technical skills should be conducted before the skills are spread among herders.



# **Integrated Application of Technical Skills and Participatory Approaches in Rangeland Improvement in Pastoral Areas**

*Zhao Qun<sup>1</sup>, Ma Jianyun<sup>2</sup> and Niang Maojia<sup>2</sup>*

## **Background**

Animal husbandry is the only source of livelihood for the local Tibetan people of Maqu county, Gansu province, China. Increases in human and animal populations per unit area of rangeland in recent years, in addition to improper grazing practices and natural factors, have caused severe degradation of Maqu rangelands. The main manifestations of this degradation are a decrease in the proportion of superior fodder grasses in the vegetation of the region, overgrowth of poisonous and non-fodder grass species, and burrowing mammal and insect disasters. Therefore, rangeland improvement techniques are recognised as important for pasture development.

Local traditional grazing practices include several management methods very useful for rangeland improvement. These include the prohibition of rangeland tilling, differentiation of winter-spring pasture from summer-autumn pasture, the practice of rotational grazing in two of the four seasonal pastures, and growing of oats for winter feed supplementation. Herders have also established organisations to regulate common pasture use, including regulations on livestock numbers. These organisations are especially useful for development projects, as they can make decisions, spread information among herders, and organise herder activities.

## **The present project**

An Oxfam Hongkong supported project was carried out from April 1999 to September 2002 and involved 100 typical poor families from Maqu County. The project objectives were to increase the productivity of rangeland animal husbandry and to stop the degradation of rangeland by constructing artificial pastures and improving natural pastures. The project attempted to enhance the sustainable economic development of poor local herder families, while improving the environment by protecting available resources. Project staff worked to adapt the project to the local natural, cultural, and historical situation. Each of the project families was given five mu [1 mu is approximately 1/15 ha] of land on which to grow highly productive fodder grass. The project also facilitated improvement of 150 mu of rangeland per family through eradication of small burrowing mammals, grass plantation, fertiliser application, weed removal, and enclosure of pasture. The participatory approach was introduced to this project through step-wise reviews conducted jointly by project technicians and herders and through training sessions at various stages of project implementation.

## **Lessons learned**

During the process of project implementation, project managers learned that in order to enhance project sustainability, the following crucial issues must be considered:

- project staff's familiarity with and enthusiasm about the participatory concept
- formation, self-management, and productivity of herders' groups
- gender sensitivity and women's participation
- adaptability of new techniques and ability to assimilate herders' experiences

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<sup>2</sup> Maqu County Grassland Management Station, Maqu County, Gansu, PRC

These issues were considered throughout the project and are discussed individually below.

To enhance project staff capabilities with participatory methods, staff training sessions were conducted using a participatory approach. The main content of these training sessions was participatory project management, participatory monitoring and evaluation, participatory mid-term project review, and gender issues and social development. The subject matter of this participatory training was associated with the actual implementation of the project.

Pre-existing herders' groups function in cooperation and decision-making and can encourage herders to participate in project design, implementation, management, popularisation, and evaluation. This increases herder levels of participation and ownership, and empowers herders to discuss problems, put forward solutions, and seek support from donors. Herder group participation in management, implementation, monitoring, and evaluation helped technicians discover technical, financial, temporal, and labour problems faced by herders in constructing artificial pasture, harvesting and storing fodder, and improving natural pasture. Technicians and herders then discussed ways to solve these problems and revised and improved the project design and implementation. All of these steps had long-term effects on sustainable project development. In light of local herders' groups' regulations and knowledge of rangeland management, staff of the project delegated responsibility for certain decisions to the herders themselves. One decision made by herders regarded how much natural pasture to improve and how much artificial pasture to create.

A comprehensive analytical study was conducted on the gendered division of labour relating to project activities; division of labour and decision-making between men and women was found to be unbalanced. Women provide the main labour force for both family production and community economic development. Since women provided labour for this project, their feelings and opinions needed to be reflected. This project enhanced their decision-making rights and capabilities and brought them more respect in their society. Several activities enhanced project women's ability to participate. Timing of training sessions and services was arranged to female participants' convenience. In the initial stage of the project, families consisting of women and children only were identified as important to support. They were not only beneficiaries, but also participated in project design and evaluation. Project staff also had discussions with women and later conveyed their opinions to the larger group. Throughout the project, timely intervention was carried out on crucial gender issues.

Use of herder wisdom made this project more successful in several ways. For example, herders suggested a change in time of oat planting to avoid wind damage. They suggested raising the utility of enclosed pasture, while reducing the workload of fertiliser application, by grazing goats and sheep at an appropriate time for an optimum duration. They also came up with the successful idea of eradicating small burrowing mammals by closing the holes with mud. Herders' notion of non-violence was expected to be a great obstacle to pest eradication in this project. However, herders had already come to understand the importance of this to prevent grassland degradation. They supported technicians in eradication efforts, and during the process, learned to apply the techniques themselves. Research is required on traditional animal husbandry knowledge and its similarities and differences with new technical skills and on how the spreading of grassland improvement skills affects herder lifestyles.

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# **A Community-based Approach to Mitigating Livestock-Wildlife Conflict in Ladakh, India**

*Rinchen Wangchuk<sup>1</sup> and Rodney Jackson<sup>2</sup>*

## **Background**

Livestock depredation by snow leopards and wolves is widespread in Hemis National Park, Ladakh, India, which covers 3,350 sq km of the trans-Himalayan range of Ladakh. The Park contains prime snow leopard habitat and harbours four species of wild sheep and goats, giving it international biodiversity importance. About 1,600 people live in 16 small settlements in the Park, scattered across three valleys.

A key management issue is the increasing complaints of livestock depredation by snow leopards and wolves. During 1997-1999, local villagers reported losing 492 animals to predators in a 14-month period, about 12% of the total livestock herd and valued at an estimated US \$23,500. Mean annual household loss was estimated at 6.2 animals, an average value of \$297 per family. The most significant and adverse impact occurs when a snow leopard enters a poorly constructed corral and wounds or kills all of the sheep and goats inside, which cannot escape the enclosure. These mass killings account for nearly 50% of livestock losses to predators.

In 1996, the Jammu and Kashmir Wildlife Department's Ladakh office initiated a compensation programme for the local population. However, lack of funds and cumbersome registration claim procedures often caused herders to hike for several days to the office in Leh, only to wait for two or three years for compensation which when it came was insufficient for the effort invested. At this point, the Snow Leopard Conservancy (SLC), an international non-government organisation, became involved, with the aim of addressing the root causes of depredation losses.

## **The project**

The SLC project used appreciative participatory planning and action (APPA), a sequential, reiterative process seeking to 1) discover community strengths and valued resources; 2) envision short and long-term futures, assuming that necessary resources are suitably mobilised and the community acts in concert; 3) design a basic action plan for guiding development and nature protection while limiting long-term dependency upon outside financial sources or technical 'know-how'; and 4) motivate participants to initiate community-improvement actions immediately on their own, rather than delaying the process indefinitely.

Exercises during the participatory 'discovery' phase in all five selected settlements implicated poorly constructed livestock pens and lax daytime guarding practices as the primary causes of depredation. The next step entailed envisioning how each village might look within a time frame of one to two years (short-term) and five to ten years (long-term) if the community acted to reduce predation losses, protect snow leopards and other wildlife, and successfully enhance their income-generation skills.

Participants readily concurred that virtually all existing corrals were poorly constructed, with low and flimsy walls offering little to no deterrent to a predator

<sup>1</sup> Snow Leopard Conservancy, Leh, Ladakh, India

<sup>2</sup> Snow Leopard Conservancy, Los Gatos, CA, USA

intent on an easy meal. Thus, the remedial measure most supported by villagers was predator-proofing of night-time corrals and prevention of multiple killings of livestock, followed by herder education to improve day-time guarding and animal husbandry practices, and protection of the natural prey base. Participants designed and constructed predator-proof night-time enclosures with strong, high walls, mesh wire covering the roofs to preclude any access from above, and well-made wooden doors. Corrals constructed in a top-down manner had been less well designed; for example, some were placed adjacent to cliffs along which a snow leopard may gain easy access to the tightly packed livestock within the three-metre-high walls.

The action plan for the new corrals specifies details such as where to build, who is responsible, what are the required inputs, how many are required, when to conduct activities, how to implement, and how to monitor. Participants produced drawings illustrating the improved livestock enclosure, along with related design documentation on enclosure dimensions and required materials. In order to avoid encouraging an increase in livestock numbers, we ensured that the improved facilities are no larger than the existing structures they are intended to replace. It was also important to agree upon what could and could not be realistically achieved in terms of reducing loss, and to understand the impossibility of eliminating all livestock depredation from an area.

Using a poster depicting good and poor animal husbandry practices and illustrating examples of economic and social benefits of protecting wildlife, we explored ways in which wildlife can benefit local people. Rather than trying to establish an unfamiliar activity or economic system, we looked at how communities might improve upon what they are already doing. Since adventure trekking is well established in Ladakh, local people needed help capturing more tourist dollars without increasing their dependency upon tourism in these uncertain times. We concentrated on skills training for operators of 'parachute cafés' and will help villagers develop home-stays in the future.

## Conclusions

APPA is a powerful tool for instilling pride in herders and farmers by highlighting positive community attributes and building upon traditional values and successes. This approach is highly effective in mobilising rural communities toward greater self-reliance, and thus a more harmonious long-term relationship with the national park in which they live and upon the resources of which they depend for their livelihoods. It is apparent that corral predator-proofing can be very effective in reducing losses and alleviating conflict due to livestock depredation by snow leopards. As our experience in Ladakh demonstrates, enhancing existing structures can be accomplished inexpensively and with considerable input from local communities. It is now widely acknowledged that the future of most protected areas hinges on the degree to which local people's concerns, needs, and aspirations are addressed by conservationists. A promising approach rests in promoting a set of carefully designed and monitored community-based stewardship initiatives, in which local people offer visitors good wildlife viewing opportunities, local nature guides, traditional home-stays, attractive camping sites, and/or handicrafts. Wherever possible, we believe that corral predator-proofing should be implicitly linked with specific conservation measures and initiatives to enhance local incomes.



# How Much Participation? Experiences with Participatory Approaches in Pastoral Settings

Wolfgang Bayer<sup>1</sup> and Ann Waters-Bayer<sup>2</sup>

## Background

Rangeland management is a difficult aspect of development cooperation, as there are no universally applicable development models for rangeland areas. Recently, however, governments and development agencies have shown increasing interest in participatory approaches for rangeland management and pastoral development.

Development projects involving interventions in rangelands commenced about 40 years ago. In the 1960s and early 1970s, the emphasis was on technology transfer, increasing production for urban and international markets. This was largely based on the American ranching approach. In the 1970s, it became increasingly clear that, for ecological, economic, and institutional reasons, this approach was not appropriate in many regions. Analyses of ranching project failures revealed that existing pastoral systems had been poorly understood. Resulting analyses of pastoralism found highly efficient resource use among traditional pastoralists, rich indigenous pastoral knowledge, multiple functions of rangelands, inadequacy of conventional ecological theories, and threats to sustainable pastoralism from policies based on paradigms of sedentary land use.

Nonetheless, participatory development projects did not become mainstream until the early 1990s when they became fashionable in Africa, at which point there was much confusion. This was especially so in pastoral development, as most official project planners lacked pastoral backgrounds and regarded sedentary life-styles as superior. Hence, proponents of participatory rural appraisal (PRA) and its offshoot, participatory learning and action (PLA), saw the need to classify participatory approaches following a line of growing involvement, responsibility, and ownership of project measures by local people and a parallel diminishing of decision-making by government officials and project staff.

In 1993, the German Agency for Technical Cooperation (GTZ) commissioned a review of participatory approaches in pastoral settings, with a focus on Africa. They found that participatory approaches were largely restricted to the stage of situation analysis. Development workers and government officials often defined key problems differently than did pastoralists. Data collected was predominantly qualitative or semi-quantitative. A variety of methods were used in pastoral settings. Use of participatory methods mobilised community enthusiasm, but also created high expectations. And, participatory approaches required a change in roles of actors in the development process.

## The study

Some GTZ personnel consider participation a key to sustainable development, and they recently commissioned a follow-up review of participatory approaches in pastoral development, this time focusing on participatory monitoring and evaluation (PM&E). They found that much of what has been documented about M&E in pastoral settings

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<sup>2</sup> ETC Ecoculture, Leusden, The Netherlands

is not what they would consider participatory, as it does not focus on local institution building or project accountability to partners. Some other main findings of this recent review are that although M&E projects with certain major international donors increasingly contain participatory elements, non-government organisations (NGOs) are at the forefront in developing PM&E approaches designed to strengthen local capacities. The most common topics to which PM&E is applied are water development, community-based veterinary services, local institutional development, conflict management, and participatory experimentation. The main tools used in PM&E are the same as those used in situation analysis and project planning, covered in the 1994 study. Systematic PM&E requires answers to several important questions, which frequently go unasked.

GTZ also concluded that PM&E cannot provide all the information needed by all stakeholders. As data requirements among stakeholders can differ substantially, conventional and participatory M&E can be conducted as different aspects of the same project. There are even situations in which PM&E is not appropriate.

## Conclusions

Local people normally understand local conditions and processes quite well. What they may not understand so well are the motives and reasoning of government agencies that must cater not only to a group of pastoralists but also to a nation as a whole. International relations are probably beyond the understanding of most pastoral groups.

International and national agencies concerned with desertification attach much importance to rangeland monitoring. If this is going to attract pastoralist participation, it must be useful to pastoralists. Useful monitoring requires an efficient institutional system that allows pastoralists to make better daily decisions in pasture and water resource management and caters to their long-term concerns.

A certain degree of institutional maturity among pastoral communities is a prerequisite for effective participatory planning, implementing, monitoring, and evaluating of rangelands and development projects. These institutions must be capable of acting as and when necessary.

A central concept in participatory approaches is subsidiarity, which calls for higher levels of organisation to take on only those issues that lower levels cannot handle competently. In this spirit, it should be the local people who decide how to conduct their M&E and whether participation of outsiders is needed to achieve their goals. Likewise, higher echelons of organisation must consider whether they can better achieve their goals with or without the support of local people. Participation is always a process of negotiation.

Development support organisations should embark on participatory approaches to pastoral development only if they are prepared to commit themselves to long-term partnership. The processes of building mutual trust, developing local capacities, and strengthening local institutions are slow. PM&E can enhance pastoral communities' capacities to manage their own development, but the PM&E approach must build upon local needs and areas of responsibility. Trying to impose a PM&E system to satisfy donors' demands or to generate information that local people do not need and cannot use is a contradiction in terms.



# Integrating Yak-herding Communities into Conservation and Resource Management Planning Processes In Jigme Dorji National Park, Northwest Bhutan

Tshewang R. Wangchuk<sup>1</sup>

## Background

Jigme Dorji National Park (JDNP) was established in 1974. Located in north-western Bhutan, it is the largest protected area in the country, encompassing 4,349 sq.km. It stretches from warm broadleaved forests to snow-capped Himalayan peaks and harbours plant and animal assemblages representing various ecosystems within a short lateral distance. As well as being an important area for medicinal plants, the Park provides habitat for predators such as snow leopard, tiger, and Himalayan black bear, supported by ungulates such as Bhutan takin, musk deer, and blue sheep. Pheasant-like species such as monal and satyr tragopan abound in the forests, and red panda has been recorded in temperate broadleaved forests with thick bamboo undergrowth at much lower elevations than elsewhere in its range. The presence of these animals out of their conventional ranges is a matter of interest requiring further investigation.

Perhaps the most influential component of the JDNP ecosystem is the resident community of roughly 6,500 people, who rely directly on the Park's natural resources. They have coexisted in this environment for centuries, utilising resources sustainably. These alpine herders' major source of income, and of a whole array of necessary products, are yaks, whose sure-footedness and toughness make them excellent for transporting provisions in the rough and snowy mountain terrain or as draught animals to plough fields.

## Issues

With improved animal health services and increasing human population, pressure on rangeland resources is on the rise. Sustainable management of rangelands and efficient animal husbandry practices are thus crucial for socioeconomic development.

However, conservation of biological diversity has been given high priority by the government, and development planning cannot be at the expense of ecosystem stability. Bhutan, with its relatively low population scattered over numerous valleys, has been able to maintain a balance between resource utilisation and conservation, and has thus been globally acclaimed. The government has recently formulated strong conservation policies, including a protected area network comprising about 26% of the country, connected by biological corridors comprising another 9%. However, conservation has often been blamed for increasing problems of livestock and crop depredation by wildlife. Wildlife damage to crops and livestock, and encroachment and fragmentation of farms by forests, have made it exceedingly difficult for farmers to manage their farms.

It is easy to attribute recent increases in wildlife populations to conservation. However, when the Bhutan Forest Act was enacted in 1969, many early development efforts were also taking place. Another cause of increasing 'pest' animal populations was extirpation

<sup>1</sup> WWF-Nepal, Kathmandu, Nepal

of predators in the early 1980s. Poison administered by farmers in animal carcasses to get rid of wild dogs did not discriminate between species, and thus eliminated various non-target predator species such as leopard, and sometimes tiger.

One school of thought holds strict conservation rules, such as the 1969 ban on all forest fires and hunting, responsible for wildlife-related problems. This school assumes that with more lenient rules, forest fires and hunting would limit problem animals. This school thus blames conservation for wildlife-related problems on farms. The hunting ban may have resulted in a rise in livestock depredation by predators, especially in alpine areas by snow leopard. However, the true cause for this change is a complicated web of factors, including an increased presence of field staff and a resulting increase in reports of livestock depredation incidents, and farmer anticipation of financial compensation.

When humans and wildlife co-exist, conflicts are bound to arise. In the lowlands of Bhutan, cattle are lost to leopard, tiger, and wild dog. In the mountains, snow leopard, Himalayan black bear, and Tibetan wolf attack yaks and calves. There is competition between yaks and blue sheep in the fall, when male blue sheep come lower to mate, and in the winter, when forage is scarce. Mastiff guard dogs scare away wildlife, sometimes attacking blue sheep, and have been vectors of disease in yaks, which might be passed on to wild ungulates. Destruction of regenerating plants by livestock has been well documented in forests and meadows. In broadleaved forests, increasing dominance of invasive or low-seral plant species indicates a decline in fodder quality. Grazing has also been found to reduce the number and density of broadleaved tree species.

There are also positive relationships between livestock and biodiversity conservation. Rice terraces are enriched with organic manure from cattle sheds. Livestock grazing maintains the openness of valley floors, creating habitat favourable to takin. Young shoots of dwarf bamboo and *Arundinaria* are nipped by livestock, preventing them from growing tall and producing winter habitat for black-necked cranes.

## Future development

Bhutan's development philosophy is based on a balance between sustainable resource utilisation and environmental conservation. It focuses on equitable distribution of costs and benefits and accommodation of religious, social, and cultural values. JDNP works with local residents, other government agencies, and relevant stakeholders to assess resource use patterns, identify constraints, and develop sustainable management plans. Plans for all ten major communities within the Park are currently in the process of completion. The first community-based resource management plan has been implemented in the community of Laya, and experiences gathered are being used to replicate the work in other communities. These plans are integrated into local geog level (smallest administrative unit in Bhutan) planning processes so that park management plans are part of normal government functions.

The planning process in Laya involved building the capacities of village elders, government extension agents, planners, and Park staff. A series of workshops and training sessions was held. Extensive fieldwork was carried out using participatory rural appraisal, rapid rural appraisal, participatory learning and action, and community meetings. This resulted in feasibility studies describing specific problems to be solved and strengths and opportunities to be utilised. To realise objectives,

planning must be approached from a comprehensive angle. To conserve biodiversity, pressure on natural resources must be reduced, and sustainable management alternatives must be investigated. The socioeconomic implications of such activities must also be understood.



## **Holistic and Community-based Approaches to Building Sustainable Livelihoods for Herders in Mongolia**

*Ayurzana Enkh-Amgalan<sup>1</sup>*

### **Background**

The extensive livestock industry of Mongolia provides almost half of national employment; yet, it remains largely a subsistence economic activity. The major characteristics of this extensive livestock industry are its absolute dependence on an extremely harsh and highly variable natural environment, and the resulting low and basically constant yield per animal over time.

With the transition of the Mongolian economy to a market-oriented system in 1990-1991, the extensive livestock production system developed over the previous 30 years collapsed. The government privatised the ownership of stock, and after long years of central planning, stood back and left the industry to reorganise itself. During the past 10 years of transition, the dominant policy was to pursue livestock privatisation and price liberalisation, expecting the market to do the rest. This had some drastic and unexpected effects. Individual herders' interests in maximising livestock numbers contradicted the national interest in ensuring long-term sustainable development of the industry by maintaining the potential of pasture resources. Small households lacked resources for providing such important services as preparation of supplementary fodder, medication for livestock, transportation and marketing, and management of production and price risks. Finally, the gap between rich and poor herders increased dramatically.

Furthermore, Mongolia has been affected with three consecutive hard winters, leaving thousands of herding families with no animals and adding significantly to the ranks of the rural poor and destitute. There has been a surge of aid to affected areas, including provision of hay to save remaining animals and restocking of herders who are left with no livestock. This is not sustainable.

### **The project**

In 2000, the Center for Policy Research (CPR) hosted an international seminar, which was attended by top officials of UNDP missions in Asian countries. A proposal was subsequently prepared to launch a small pilot project registering informal grazing rights of customary herding communities. The resulting project attempted to assist herders in adopting more sustainable strategies of income generation; namely, building capacities to mitigate risks, improving productivity, and introducing

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alternative business opportunities. The objective was to change the incentive structure so that herders no longer maximise livestock numbers. The project used a holistic approach, with maximum participation of the direct beneficiaries in designing and implementing activities. This approach was deemed appropriate because different problems faced by herders are closely interrelated, and no one problem can be fully resolved without addressing other problems. For example, improving the supply of technological inputs, such as supplementary fodder and veterinary services, could not be achieved without improving marketing to increase herders' incomes. To ensure long-term continuity of activities started, the project tried to maximise community efforts.

There were seven aspects on which the project concentrated. They were institution-building and strengthening of customary herding communities, grazing land management, supplementary fodder, veterinary services, livestock breeding, marketing and small to medium sized enterprise (SME) development, and herder business skills.

## **Conclusions**

The project had many good aspects. These included the participatory holistic approach, some unique ideas, successful cooperation with central and local government agencies, replicability and sustainability of some models and initiatives, and strong public relations activities.

There were also some debatable issues. The largest of these was the revolving funds provided by the project for the communities. There have been criticisms that these funds may not be sustainable. The project, however, deemed them to be sustainable for two reasons. 1) Under the scheme used, the funds were partly grants between the project and recipient communities; however, between the communities and their members, they were not grants but loans. Also, 2) all funds and equipment were used in accordance with rules developed and approved by community members; as such, these rules have mandatory power.

There have also been claims that the funds were too large. Under this project, one community received a fund of US \$1,000. Replication of this fund to the total of roughly 9,000 communities would require nine million dollars. In comparison, the international community spent US \$25 million in relief assistance during the past two winters. Unlike the funds used in this project, that money was not used for building the capacities of herders.

One problem with the funds that the project does acknowledge is that they give a wrong incentive to establish or join community institutions. The argument can be made that this is acceptable, since the communities are really self-sustainable, and those who joined are still enjoying them. They constitute a big improvement towards building the capacities of herders and a shift from the current state of welfare. However, there is room for improving the effectiveness and efficiency of these funds.

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# **pastoralists, Government, and Natural Resources in Iran: organisational Learning in the Forest and Range Organisation**

*Mohammed H. Emadi<sup>1</sup>*

## **Background**

The geo-climatic characteristics of Iran make most of the country more suitable for pastoralism than for crop cultivation, particularly in the Zagros and Alborz mountains of the central plateau. History illustrates that 'pastoralist nomads' have been the main users of these resources since times probably preceding any settlement by sedentary peoples. The ability to sustain such a way of life over millennia suggests that, at least until relatively recently, the nomadic pastoralists of Iran were able to achieve some sort of ecological and economic 'balance' through long-time co-adaptation with their environment.

All of this has changed drastically in recent decades, and nomads are now held responsible for significant degradation of the rangelands over which they migrate with their livestock. Indeed, the situation has degenerated to such an extent that many consider the continued existence of these transient pastoralists and their traditional lifestyle severely threatened.

Conventional strategies for development have generally failed to respect, or even to identify, the complex inter-relationships between nomads and their environment. Therefore, past efforts to improve the natural resource status of Iranian rangelands – traditionally entailing technology transfer and centralised, top-down planning – have generally been considered unsuccessful. Natural resource degradation is increasingly the major concern in these nomadic areas and has not been addressed by resource redistribution, technology, or conservation strategies.

Thus, there have been calls for the adoption of holistic perspectives as a foundation for effective strategies for collaborative and sustainable improvements. Reflections on field experiences in Iran, including endeavours involving various organisations, support the claim that 'participatory action research' (PAR) is an appropriate approach in the search for more holistic, participatory strategies for the co-management of natural resources utilised by pastoralists in Iran.

## **The project**

The underlying theme of this paper is that the limited nature of achievements in nomadic development and natural resource conservation stem from two facts about past policies. First, they have been based on reductionist viewpoints and analyses, which separate theory from practice and neglect the diversity, complexity, and recursiveness of the different dimensions of nomadic life. Second, these policies are developed based on government perceptions of the nature of the issues confronting nomads, rather than on concerns shared by the nomads themselves.

Starting in 1990 and continuing for seven years, a project attempted to apply holistic research to integrate 'action' and 'research' into the learning process. Three interrelated phases of this PAR project were planned and organised independently with various actors. The aim of the first phase of research was to explore the

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complexity and diversity of the current problematical situation. The question dealt with by this phase of ethnographic exploration was, "What do the nomads themselves perceive to be threats to their welfare and cohesion as a purposeful group of nomadic pastoralists?"

Critical reflections on this phase of the research by the researcher-as-participant/observer confirmed the following:

- that the perception of the current situation by the nomads is complex;
- that the nomads feel uneasy and vulnerable in their present situation;
- that there is no sign of improvement in future trends as seen by the nomads; and
- that there is a need for improvement in mutual understanding between government officials and nomads.

## Outcomes

Reflection on the outcomes of the first phase of the research led to the submission that a more action-oriented or 'development-focused' approach would represent a potentially important innovation in a seemingly irresolvable situation. The second phase therefore aimed to assist nomads and various government agencies to understand each others' perspectives, and to go beyond the 'symptom' to find common issues and goals. This was accomplished through a combination of the following two approaches: the 'northern tradition' of AR, with its emphasis on organisational change through problem solving; and the 'southern tradition' of PAR, developed in the context of empowerment of 'disempowered communities' in the 'third world'. Among the outcomes of this phase were clear agreement within the action researching teams about the failure of their conventional approaches to the 'problems with the nomads', and the particular transformation of that worldview into one more accurately portrayed as the 'problems being faced by the nomads'.

Reflection on these outcomes showed that changes in the attitudes and beliefs of practitioners toward 'seeing things the other way around' are crucial. Therefore, the third phase was designed to facilitate organisational learning for change within government agencies, such as the Forest and Rangeland Department. A workshop for this department was conducted with three themes – systems thinking, fundamentals of experiential learning, and people's participation in natural resource co-management. The essential metaphor introduced during this event was the organisation as a learning system as distinct from a regulating system. Feedback from the participants in this workshop confirmed that there were significant transformations in thinking about the complex relationships between Iranian pastoralist nomads, the environments in which they live and work, the technologies they use, the government departments concerned with sustainable development, and the society at large. This has resulted in a fundamental shift in organisational behaviour within the Department and the restructuring of the Ministry of Agriculture to better support participatory development in nomadic areas.

In closing, past approaches to development activities must shift from conventional empiricism, with its linear logic and power relationships, to models endeavouring to establish systemic and mutual recognition and accommodation of change among 'clients' and the facilitating researcher.



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

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## Background

Since establishment of the People's Republic of China (PRC) in 1949, grassland tenure arrangements have paralleled those on arable land. The 1950-1955 land reform programme redistributed land of landlords and rich peasants to poorer, landless, or tenant farmers. Following the subsequent collectivisation programme, rural land underwent a period of approximately 20 years of collective ownership and use. Current tenure policies for grassland in China began in the early 1980s with establishment of a pastureland contracting system, which adopted the household as the primary grassland contracting unit. Under the PRC Grassland Law (1985), pastureland remains under the ownership of the state or collective unit and is contracted to households for long-term use. Related management policies envisioned that allocation to individual households be followed by assignment of carrying capacities and that a system of incentives and sanctions be introduced to enforce compliance with assessed stocking limits.

Several characteristics of China's grassland resources have an important bearing on tenure and management arrangements.

- Grassland covers nearly 40% of China.
- China's grasslands are primarily located in its northern and western provinces, with high poverty rates and ethnic minority populations relative to other provinces.
- China's grasslands are geographically and ecologically diverse – from alpine meadows on the Tibet-Qinghai Plateau at over 4,000 masl, through steppe and desert in arid regions like Xinjiang (with less than 150 mm of annual precipitation), to hilly grassland in sub-tropical Yunnan Province or the semi-arid Loess Plateau.
- It is estimated that 90% of China's grassland has been degraded to some degree, with 42% moderately or seriously degraded. Many officials and researchers consider land tenure and management arrangements significant contributing factors to this ongoing degradation. As a result, grassland tenure and management arrangements in China should strive to balance a number of often competing objectives, including poverty alleviation, environmental protection, and continuation of indigenous resource management strategies.

Worldwide, there are two main methods of grassland management, each of which varies among countries. Under the common property model, property is used in common by a self-regulated group. Early pastureland systems centred on this model, on which many areas of Africa and Asia continue to rely. Under a second approach, utilised in most western countries, grazing land is privately owned or leased from the government by individual ranchers, and regulation is conducted by government agencies. This paper explores some of the multiple variations of these broad management styles in examples from Mongolia, the United States, Canada, and Australia.

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The following five attributes have been identified that might make a certain piece of grassland more suitable for communal land tenure: low production per land unit; low frequency of use or dependability of yield; low possibility for improvement or intensification; large herding territories required; and large capital-investments required.

## **The present project**

The Yunnan Center for Community Development Studies and the Rural Development Institute undertook a cooperative research project in 2001; in August-September of that year, researchers conducted 14 days of fieldwork in 13 villages. Village selection criteria included ethnic composition; composition and nature of land resources; presence of unique tenure arrangements; and importance of agriculture, forestry, and herding to the local economy. The research team used primarily rapid rural appraisal and participatory rural appraisal techniques during village interviews.

The results of this project include the following five general findings.

- Common property grassland resource management existed in all fieldwork villages.
- Both local officials and farmers expressed strong support for common property resource management on some or all of their community's grassland.
- Many cadres and farmers felt that common property grassland management arrangements have been equally or more successful than household contracting.
- Local cadres and farmers felt that property rights regimes for arable land and non-arable land must reflect the unique characteristics of these different resources.
- Additional field research is necessary to determine the range of grassland tenure arrangements currently employed in China, their ability to meet central and local policy objectives, and opportunities for community-based institutionalisation.

## **Grassland policy recommendations**

During the study, farmers described three factors that greatly effect grassland tenure in the region. These include 1) cultural preferences for common property management; 2) inability of individuals to manage, or even assert rights to, grassland areas, due to the remoteness of alpine pastures and the vast expanses of land involved; and 3) prohibitive expense of demarcating and enclosing individual pastures. This list is not offered to suggest that national laws and policies should attempt to devise a formula for application of policy alternatives based solely upon these factors. Rather, we would like to suggest that appropriate policy responses to combinations of factors in specific localities can be developed within a broad framework established at the national level.

We have the following policy recommendations. Formulation of central government policies governing grassland tenure should permit a variety of common property management systems, as well as household management, in order to account for a broad range of factors not addressed in current laws and policies. Design principles useful in establishing efficient and sustainable common property resource management systems include the following.

- Balanced national policies
- Local authority systems

- Clear legal access rights to the resource
- Audits of land condition and community behaviour
- Participation in rule-making processes
- Rapid, low-cost dispute resolution
- Management tools including fines, sanctions, fees, and taxes
- Forthcoming laws addressing grassland tenure (such as the Property Law and the Rural Land Contracting Law) should explicitly allow for local tenure variations.

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## **Nomad People Should be the Major Concern in Grassland Policy - Case Study from the Northeastern Tibetan Plateau, China**

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### **Background**

In most pastoral areas, the key constraint is lack of water; on the north-eastern Tibetan plateau, the key constraint is extremely low winter temperatures. This area – administratively covering eastern Qinghai, south-western Gansu, and north-western Sichuan provinces – is the most productive area of the Tibetan plateau due to its climate and topography, and grazing of cold-tolerant livestock has been the dominant land use here for thousands of years. The average elevation of the north-eastern Tibetan plateau is 3,500-3,600m, whereas that of the entire plateau is over 4,000m. The Yellow River and some of its local branches meander through this large depression comprising the transition zone among the Tibetan plateau, the highly erosive Loess Plateau, and the eastern China monsoon forests, and create one of the largest and most biodiversity-rich high-altitude marshes in the world. This area provides ecosystem services of global importance. Its ecosystems are characterised by variety, sensitivity, and uncertain successional trends. Its vegetation is dominated by perennial grasses and sedges of sub-alpine meadow and marsh types, such as species of *Elymus*, *Festuca*, *Poa*, *Kobresia*, and *Carex*. Although this area is very productive, it is one of the most sparsely populated areas (with only 125,000 people on over one million hectares), as well as one of the poorest, remotest, and most marginalised regions of China.

### **The current project**

The objectives of this project were

- to document and analyse grassland regulations,
- to identify policy-makers and people with influence,
- to determine how grassland laws are interpreted and implemented by these actors,
- to realise how nomadic people understand and are affected by regulations, and
- to help the various stakeholders negotiate solutions

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The project started with a diagnostic study on the pastoral production system using rapid rural appraisal (RRA). Policies and the management regime – and their strong influence on rangeland ecosystem sustainability – were the main focus. As stakeholders were identified, we increasingly included them in information gathering and planning exercises using participatory rural appraisal (PRA). We conducted training workshops, feedback meetings, and planning consultations. Simultaneously, we conducted studies on vegetation biomass and biodiversity, grazing effects, and carrying capacity.

## Results and outcomes

We identified the following grassland regulations affecting the study area.

- Grassland Law of the People's Republic of China (1985) and implementing regulations at various levels, including new revision
- Grassland Fire Control Ordinance of the People's Republic of China (1993)
- Sichuan Province Formula for Grassland Lease (1995) and detailed regulations at the prefecture level
- Grassland protection and wildlife and nature reserve conservation regulations at state and administrative levels
- Autonomous Prefecture Temporary Formula for Grassland Use Payment and Overgrazing Compensation (2001)

Along with these regulations, there are several key institutions affecting grassland policy. They include legislative institutions, in which technical officials have strong impacts, such as the People's Representative Committee; government and party leadership at province, prefecture, and county levels (which frequently interpret laws disparately); research and consultation institutions, such as universities; implementing institutions, such as township government staff and grassland supervision stations under prefecture or county Animal Husbandry Bureaus (AHB); and grass-roots level institutions, such as village heads, religious leaders, and herders with rich grazing experience.

The main aims of Chinese grassland policies are grassland allocation and conservation. The goal of grassland allocation is to alleviate degradation and improve nomadic livelihoods. Under this system, most winter-spring pastures are allocated to individual households, whereas most summer-autumn pastures are allocated to household groups. However, compulsory allocation is not always equitable or flexible and has resulted in many unforeseen problems. Also, the newly proclaimed Autonomous Prefecture Grassland Use and Overgrazing Compensation regulations are hard to enforce.

We discovered many other challenges to grassland policy enforcement. Due to lack of understanding of both policy and the rangelands, grassland technicians and County AHB staff could not implement grassland policy in a flexible, ecologically sustainable manner. Township and village leaders, supposed to enforce policy, have little say in its implementation and do not always understand its aims. Policy modification is difficult. Regional development decisions are frequently not feasible or sustainable. Some policies, however, such as the Grassland Fire Control Ordinance of the People's Republic of China, are well implemented and followed, because the local people appreciate them.

Local nomads felt that the national grassland law is a logical, flexible, and adaptable framework and that appropriate regulations are required at county and township levels. They felt that investigation is needed – assisted by experienced nomads and experts – before decisions are made and that local people should be allowed to express their opinions about policies. Finally, they felt that they – who depend on rangelands and livestock for their livelihoods – should be compensated when asked to conserve the environment for global sustainability.

This project taught us four main lessons. 1) Negotiation among stakeholders is critical. 2) Policy implementers at county and lower levels should receive training courses in rangeland ecology and management and policy goals. 3) The livelihoods and indigenous knowledge of nomadic people should never be neglected by decision makers. 4) Papers should be published to increase the awareness of leaders and the public.

This project also accomplished several things. Project team members' self-reliance and understanding of the working area and the participatory approach were enhanced. Provincial technical officials and local leaders were also introduced to the participatory concept. And finally, we achieved capacity building of local people, especially poor families and students, and even negotiated some solutions, through participation.