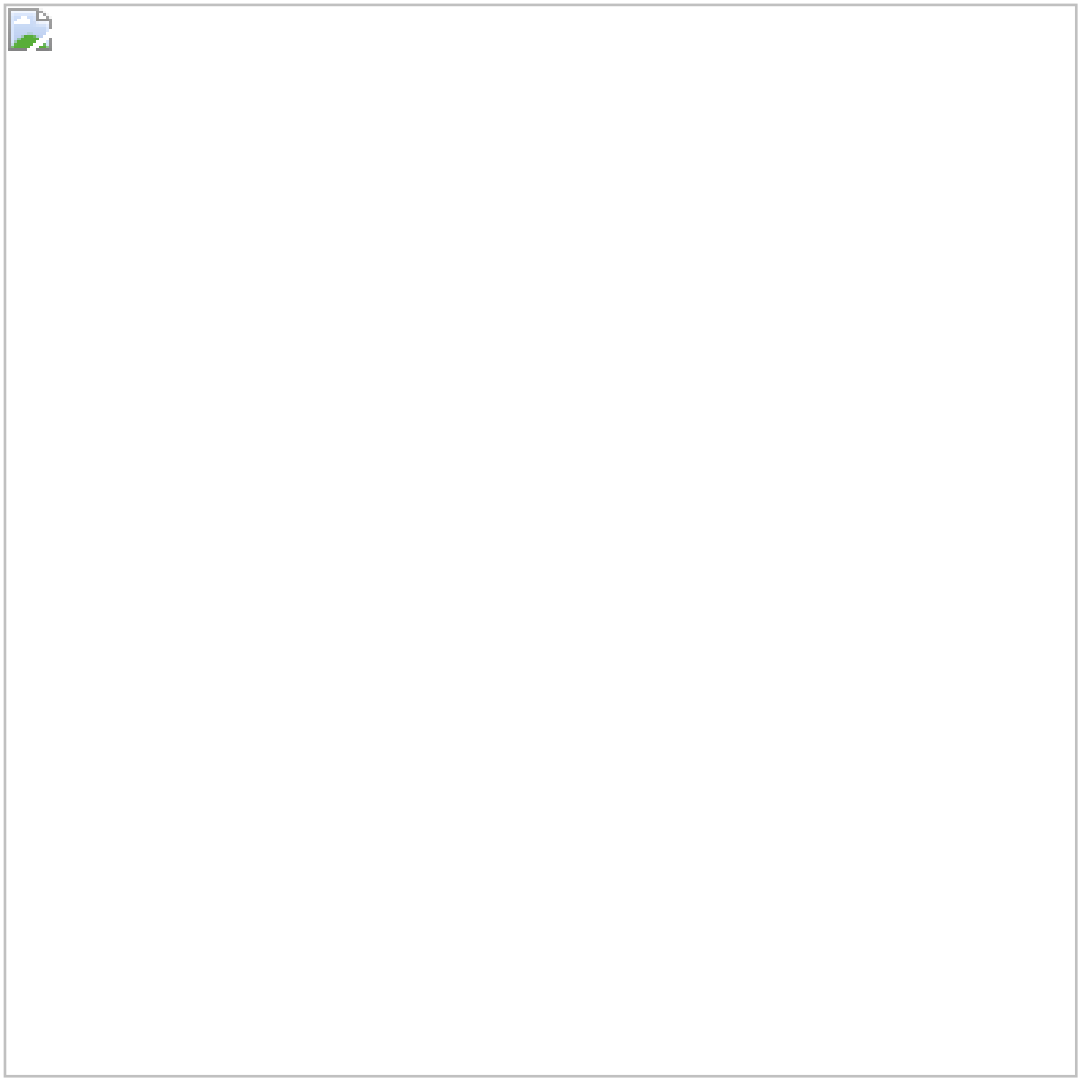

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Author: Ludi, Eva

Source: Mountain Research and Development, 23(2) : 119-123

Published By: International Mountain Society

URL: https://doi.org/10.1659/0276-4741(2003)023[0119:SPMIKA]2.0.CO;2

Mountain Research and Development Vol 23 No 2 May 2003: 119–123

Sustainable Pasture Management in Kyrgyzstan and Tajikistan: Development Needs and Recommendations

Eva Ludi

For many centuries, (semi-)nomadic pastoralists used pasture areas in the Tien Shan and Pamir mountains. Under Soviet rule, sedentarization began in the 1930s and collective farms replaced socioeconomic units based on kinship. Soviet land use was monofunctional and dependent on high levels of inputs such as chemical fertilizers, machinery, concentrated feed, and subsidies and was neither ecologically sustainable nor economically viable. In the process of political and economic transformation after the collapse of the Soviet Union in 1991, state farms have been dismantled, land and livestock privatized, and specialized employees such as technicians have suddenly become independent farmers. Today, large farms and herds no longer exist, having been replaced by a multitude of small household enterprises. Each household's socioeconomic situation is unique, and so are household livelihood strategies. Activities focusing on sustainable development and sustainable pasture management must therefore take account of this new socioeconomic situation.

FIGURE 1 Several households share summer pastures near Murghab, Tajikistan. Water from melting snow is essential for vegetation growth in this arid region. (Photo by the author)

Pastures in the Kyrgyz Tien Shan and the Tajik Pamir

Of the roughly 20 million ha of Kyrgyz territory, more than 9 million are pastures, but only 1.4 million can be used for crop production because of topographic and climatic limitations. Arable land is restricted to valley floors, where crops are irrigated because of aridity. In Tajikistan the situation is similar, with almost 80% of the agricultural land consisting of pastures. Of the 63,700 km^2 of Gorno Badakshan Autonomous Oblast (GBAO) in the Pamir Mountains, only 13,000 ha are arable land. Summer pastures at altitudes between 3500 and 4700 m are an important natural resource, especially in Murghab District in the eastern part of GBAO (Figure 1).

The livestock sector—the most important branch of agriculture in the mountainous areas of Kyrgyzstan and Tajikistan—was dramatically affected by eco-

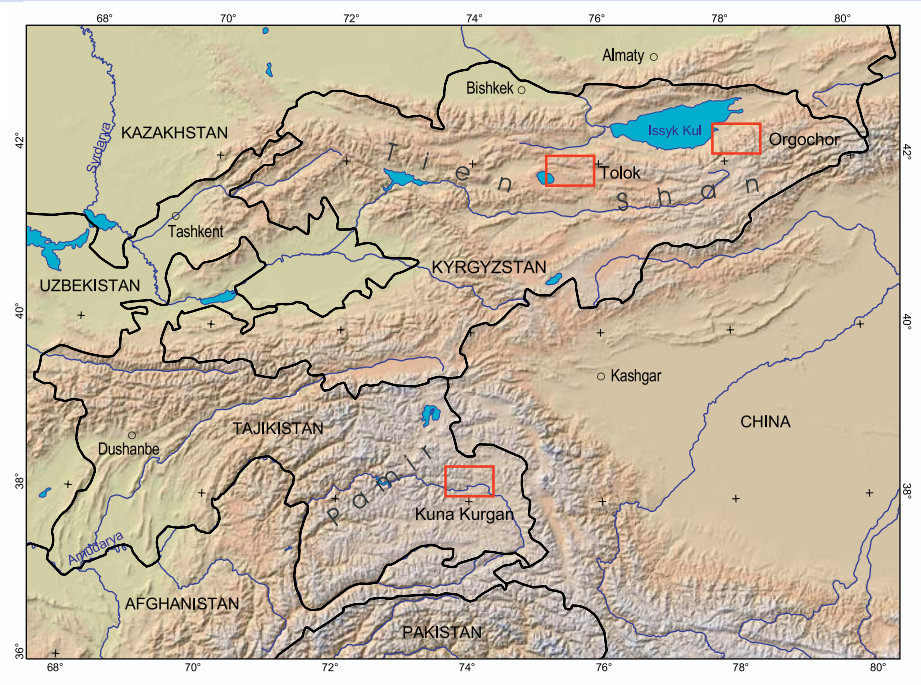

FIGURE 2 Location of case study areas in Kyrgyzstan and Tajikistan. (Map by Thomas Breu)

nomic decline after 1991. In Kyrgyzstan, the sheep population decreased from 13 to 4 million animals, and in Murghab District alone the number of sheep decreased from 69,300 in 1990 to 31,200 in 1999.

Promoting sustainable mountain development

Against a background of economic transformation and decline coupled with degradation of natural resources, the Centre for Development and Environment (CDE) at the University of Berne, Switzerland, initiated the Central Asia Mountain Programme (CAMP) in 2000 with financial support from the Swiss Agency for Development and Cooperation (SDC). CAMP's mission is to promote the sustainable use of renewable natural resources in Central Asian mountain regions, with the overall aim of improving living conditions for the poor majority among the mountain population by enhancing economic development, social welfare, and ecological sustainability.

In 2001 CAMP launched a Pasture Management Study, the aim of which is to create shared knowledge about people and natural resources in selected communities in Kyrgyzstan and Tajikistan, with a focus on household strategies and pasture management options that also create economic opportunities. An intercultural and interdisciplinary team of Kyrgyz, Tajik, Kazakh, and Swiss researchers conducted fieldwork in 2 study areas in Kyrgyzstan: Orgochor, in Issyk Kul Oblast, and Tolok, in Naryn Oblast (Figure 2). Both villages are pilot areas for the World Bank-funded Sheep Development Project (SDP), which carries out activities concerned with pasture management and land privatization. The third study area in Kuna Kurgan, Murghab District, Tajikistan, was selected as an example of a marginal area in the eastern high Pamir. During almost 3 months of fieldwork, study teams applied a transdisciplinary methodology known as Sustainable Development Appraisal (SDA) and developed at CDE. SDA is used in participatory assessment of baseline data relevant to development and evaluation of the local setting in relation to sustainable resource management and sustainable development from the viewpoint of different actors (see Box).

Recent development trends in the agricultural sector in Kyrgyzstan and Tajikistan

Under the centralized Soviet system, specialized *sovkhozes* and *kolkhozes* were responsible for either crop or livestock production. When these state farms were dissolved and economic support for marginal mountain areas ceased after 1991, people reverted to subsistence agriculture. Households today are engaged in crop production and livestock rearing, mainly to meet subsistence needs. Many households were forced to take up employment in the agricultural sector, although many of the people who did this used to be specialized employees during the Soviet era, and lack comprehensive agricultural knowledge.

When the state farms were dissolved, assets were usually distributed among the inhabitants of the area. Households received small areas of cropland and some animals, depending on the number of family members. Few households were able to maintain their herd size or increase the number of animals during

their first years as independent farmers. On the contrary, it was observed that households had to sell assets to be able to purchase other vital goods.

Pasture use today

Different types of pastureland exist in Kyrgyzstan. First, there are pastures close to villages, managed directly by the community. Second, vast but underused areas of remote mountain pastures in the Tien Shan are still under the administration of the Oblast. And third, intermediate pastures, usually located in the footzones of mountain ranges, are defined as intensive pastures and are currently leased out to individual households in pilot areas for periods ranging between 1 and 99 years. The size of the pasture to be leased to households depends on the number of animals, on the ecological characteristics of the pasture area (eg, fodder production, ecological carrying capacity, and water availability), and on accessibility.

As a consequence of the individualization of agricultural production, combined with decreasing support, farmers are more dependent on natural resources close by. Those households not in a position to lease pasture areas keep their animals on pastures near villages. Because the number of animals on these pastures is often very high, vegetation and soil degradation are widespread. Remote pastures, on the other hand, are currently underused because individual herds are too small and it is not profitable for a household to use such pastures. Moreover, accessibility is severely constrained by deteriorating road infrastructure—which results in exorbitantly high transport costs—and social services in these remote pasture areas are no longer available.

In Tajikistan, state farm assets, mainly sheep and yak, were distributed to individual households after 1999. However, land still belongs to the state and no formal system of land leasing exists. Households move with their animals from winter to summer pastures. Summer pastures are located farther away from the villages in high mountain valleys, whereas winter pastures are near to settlement areas. Patterns of mobility differ according to the socioeconomic situation of households. Usually, the larger the herd and the richer the household, the greater the distance between winter quarters and summer pastures. Because many households cannot afford transport costs to move with their herds to summer pastures, animals frequently graze in the proximity of villages year round.

Major elements and steps in a Sustainable Development Appraisal (SDA). (Source: Hurni and Ludi 2000, p 21)

Components		Elements
Preparation	Background and initial steps	
Component I	Participatory assessment and appraisal of current situation	**Element 1:** Characterization of spatial units **Element 2:** Characterization of actor categories **Element 3:** Appraisal of interactions
Component II	Participatory assessment and appraisal of dynamics	**Element 4:** Assessment of biophysical dynamics **Element 5:** Assessment of social, economic and cultural dynamics **Element 6:** Appraisal of change
Component III	Participatory assessment and appraisal of development	**Element 7:** Assessment of development visions **Element 8:** Assessment of needs, options and constraints **Element 9:** Appraisal of development options
Component IV	Preparation of development profiles and synthesis	**Element 10:** Compilation of Local Development Profiles (LDPs) **Element 11:** Compilation of a Regional Development Profile (RDP) **Element 12:** Synthesis and recommendations for sustainable development
Integration	Initiation of multistakeholder negotiations	

Recommendations for sustainable use of pasture areas

Pastures are a major natural resource in Kyrgyzstan and Tajikistan and are of great importance to the local as well as to the national economy. Neither past Soviet management practices nor current practices are sustainable (Figure 3). A multitude of activities in various sectors are necessary to promote sustainable use of pasture areas.

Household level

As households are engaged in different economic activities, a holistic development approach is necessary. Appropriate pasture management systems must take into account the diversification and risk minimization strategies of households, provide positive synergies between the different fields of household activities, and make use of available assets, including human resources, at the household level.

Although diversification of household income strategies has increased in recent years, most households still depend on a few income sources linked to agriculture. Households should be supported in further diversifying their activities, on the basis of a prior assessment of household needs, options and constraints, and site-specific economic and ecological circumstances. Multiple strategies for use of pastures should also be promoted. Currently, pastures are mainly used for grazing different types of animals. Producing high-value animal products such as dairy or meat products, or processing wool and leather locally, offer good economic opportunities as CAMP's activities in this field have already shown. Other resources available on pastures, such as spices, herbs, berries, and mushrooms, are only rarely used and even less frequently sold in the market. Households must also be supported in using pastures for other purposes, such as hosting tourists and providing them with additional services, for example horseback riding, trekking, fishing, and hunting.

FIGURE 3 Degraded pastures near Tolok, Kyrgyzstan. Such signs of degradation are not a recent phenomenon but stem from Soviet times. (Photo by the author)

Community and national levels

In a pilot activity, CAMP implemented multistakeholder negotiations with the aim of empowering local populations, developing sustainable livelihood strategies, and furthering sustainable resource management and sustainable development. Such community planning activities should be carried out in all communities.

In many areas of Kyrgyzstan and Tajikistan, livestock production is likely to remain the backbone of the rural economy. Improvements in livestock production are thus of paramount importance. Breeding strategies must be adapted to the environment and the socioeconomic situation of households. Blanket recommendations will not produce the desired outcome. This poses great challenges to research and extension services because they must collaborate with land users in various ecological and socioeconomic settings and address their very specific needs, options, and constraints.

FIGURE 4 Family reunions during the summer months on high pastures are important social events—the slaughtering of a sheep is a must. The promotion of other activities besides sheep breeding could contribute to more sustainable livelihoods and eventually more sustainable resource management. (Photo by the author)

Current land tenure systems on pasturelands and related herding strategies have to be reconsidered as well. The government and international donors such as the World Bank consider privatization of intensive pastures in Kyrgyzstan to be the most promising option in terms of ecological sustainability and economic viability. But households with small herds are often not in a position to take advantage of this opportunity—hence the need to support collaboration among households. More emphasis should also be given to the establishment of pilot areas where land tenure systems other than private ownership could be tested as well because they allow different herding strategies. Examples include community ownership of pastures or pasture management by corporations. Agencies or programs with a strong focus on research and development and an extensive international network, could play a leading role in promoting such endeavors.

During the Soviet era, large herds were transported to remote pastures in the Tien Shan and the Pamir during the summer months. This involved an extensive road network, a fleet of trucks, provision of herders with everyday goods, and cultural centers with modest infrastructure and social services. Using these remote pasture areas again will require considerable investment by government or donor agencies to refurbish infrastructure.

To decrease dependency on livestock, investment in the agricultural sector must be promoted whenever possible. This includes refurbishment of infrastructure such as the irrigation system, rehabilitation and maintenance of agricultural machinery, provision of credit, establishment and support of an agricultural input and output marketing system, and establishment of agricultural extension systems. Niche production, including both livestock and crops, should be promoted to make the best use of the diverse ecological conditions in these mountainous areas and the specific situation of households (Figure 4).

Adaptation of government structures is expected to contribute to the development of marginal areas as well. A federal system based on the principle of subsidiarity could strengthen the decision-making power of people living in marginal areas. Revising legislation designed to improve the investment climate, especially in mountainous areas, is necessary to take advantage of economic opportunities.

Regional and international levels

On the basis of a few commodities, Central Asian countries developed highly specialized economies during the Soviet era and were supported by the central government in exchange. Current national strategies in small countries such as Kyrgyzstan and Tajikistan that aim at the highest possible level of political and economic independence are understandable in terms of reducing risk. However, the current population of these 2 countries is too small to absorb the potential production of the livestock sector. On the other hand, many goods are needed that are not available or cannot be produced in these countries. Much stronger integration is needed through charters, conventions, and integrated policies to foster international political and economic cooperation between the countries of Central Asia.

ACKNOWLEDGMENTS

The Pasture Management Study in Kyrgyzstan was jointly carried out by CDE, CAMP, and Kyrgyz GIPROZEM through its World Bank-funded Sheep Development Project. The study in Tajikistan was jointly carried out by CDE, CDE's Pamir Strategy Project, and the Agency for Technical Cooperation and Development (ACTED). Institutional and financial support was provided by ACTED, AKF, CAMP, CDE, GIPROZEM-World Bank, SDC, and the governments of the Kyrgyz Republic and Tajikistan.

AUTHOR

Eva Ludi
Centre for Development and Environment (CDE), Institute of Geography, University of Berne, Steigerhubelstrasse 3, CH-3008 Berne, Switzerland.
ludi@giub.unibe.ch

Eva Ludi is presently employed at swisspeace (Swiss Peace Foundation) as a coordinator of the Individual Project "Environmental Change and Conflict Transformation" in the NCCR North–South: Research Partnerships for Mitigating Syndromes of Global Change. She also works as a Research Scientist at CDE. She coordinated the field studies for the Pasture Management Study in Kyrgyzstan and Tajikistan in 2001 on behalf of CDE and in collaboration with CAMP.

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