

Change and Sustainability of Pastoral Land Use Systems in East and Central Asia (APN 2001-03)

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APN Funding

US \$65,000

Participating Countries

Forty foreign and about 60 Mongolian people attended the Symposium. Participants from Australia, Japan, Korea, Russia, and USA were directly funded by APN/START. Participants from Kazakhstan, Uzbekistan and France were sponsored by MEDIAS-France in order to allow scientists from Central Asia to set up a regional network and have contacts with their colleagues from the LUTEA project. START supported TEACOM Members, and some participants from Australia, France, Germany, Kazakhstan, Russia, UK and USA were self-funded.

Introduction/Background

The objectives of the workshop were:

- Synthesis of existing knowledge on pastoral land use and cover change (LUCC), identification of knowledge gaps and vulnerability of the regions to global change.
- Review of integrated assessments of land use/cover change and climate change impacts on rangeland ecosystems and pastoral systems and potential adaptation strategies.
- Enhancing modalities for capacity building and networking among scientists involved in research on pastoral LUCC studies in the region, and developing synergies for future collaboration.

In arid and semi-arid regions of east and central Asia, nomadic pastoralism has been the dominant agronomic activity for many centuries. Recent political, economic, social and cultural factors have caused changes in pastoral land use systems. The Symposium provided a forum for regional and international scientists to share information and develop a stronger understanding of linkages between climate, ecosystems and human elements of the region. The Symposium facilitated the integration of the knowledge gained by different research groups of natural and social scientists, and identified policy products, knowledge gaps and vulnerable regions to global change.

Outline of activities conducted

Participants dealt with issues related to the current trends of land productivity and land use in the region. Strategies of how to sustain the steppe regions region provided a lively topic for discussion from the interdisciplinary group present.

The Symposium was organized along the parallel sessions outlined below:

- Vulnerability of pastoral systems to climate change and variability.
- Political and economic drivers affecting pastoral land use systems.
- Land use impact on rangeland ecosystem and biodiversity.
- Pastoral systems in regional and rural development.
- Integrated technologies (RS, GIS and modeling) for pastoral LUCC studies, conservation and pastoral land use.
- Hydro-geomorphological impact of land use
- Agro-pastoral and urban-rural interface: vulnerability to climate and land use change.

A field trip to Hustain Nuruu was organized to study land use patterns and conservation planning. A joint research plan for the Mongolian, Chinese and Central Asian scientists was formulated during the field trip. The Symposium discussion on the sustainability of pastoral systems in the Mongolian Steppe region centered on the role which nomadic grazing systems have contributed to the degradation of the steppe ecosystems in the region. It was acknowledged that overstocking of the steppe is occurring and action to reduce this situation needs to be taken. However the solution to this problem can take various paths. The consensus view was that strategies for reversing the degradation and development of sustainable strategies for the region should incorporate the benefits of traditional pastoral systems. Rotational grazing systems utilized by nomadic pastoralists are beneficial to mitigate the effects of droughts and other extreme weather events that are likely to become more frequent and intense with climate change.

Outcomes/Products

The Symposium Abstracts have already been published and the Symposium Proceedings on “*fundamental issues affecting sustainability of the Mongolian steppe*” will be published in spring, 2002.

The development of a grazing management system that considers the advantages of traditional practices and incorporating appropriate new technologies would provide the best path forward to attaining the long-term sustainability of steppe resources. Appropriate strategies include:

- Strengthening traditional pastoral (resilient) networks and communities.
- Development of a disaster relief mechanism for dealing with natural disasters, such as *zud* (the Mongolian term used for severe winter conditions affecting livestock), droughts, fires and animal disease outbreaks.
- Restoration of degraded pastures, especially near water sources.
- Improvement of key ecosystem management, including riparian ecosystems.
- Restoring and adding water points.
- Enhancing hay production wherever possible.
- Increasing social and economic security of pastoral communities.
- Improving locally adapted and productive livestock breeding and distribution.
- Improvement of monitoring and forecasting technologies for environmental conditions.
- Improve accessibility and development of appropriate veterinarian practices for pastoral systems.

- Facilitate access to social and technological goods and services.

Future directions/Follow-up work

Integrated impact, vulnerability and adaptation assessment of climate change on pastoral land use systems is critical for regional sustainability. *A synthesis paper on vulnerability of pastoral land use systems of the region is under development.*

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