

# MEETING

## Protection of Grasslands in East Asia

***International Workshop on Sustainable Management of Grassland Ecosystems in Semi-arid Regions; Hailar, Inner Mongolia, China, 17–24 July 2013***

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An international workshop was held to examine ways to preserve the ecological values of grassland ecosystems while maximizing the economic development benefits to the local population. Experts on grassland ecosystems from Australia, China, Mongolia, the United Kingdom, and the United States presented the latest research and regional programs for sustainable management, while local scientists highlighted detailed field experiments, their findings, and future research plans. The participation of major stakeholders and representatives of local governments allowed for a transdisciplinary assessment.

Workshop attendees reported on the evidence showing that grasslands are under mounting social and climate pressures, especially in the driest regions, where observations have already shown vegetation depletion and where required land preservation and restoration efforts are slow and poorly monitored and evaluated. Combining observations, field studies, remote sensing data, and ecosystem modeling, researchers presented quantitative estimates of grassland sustainability under different scenarios of climatic change and economic development in East Asia. These

estimates showed that local anthropogenic pressure on grassland ecosystems from regional economic development is much greater than that from observed climatic and hydrological changes, suggesting that human forces are playing a dominant role in shaping ecological conditions in this region.

A variety of human activities are exerting pressure on grassland ecosystems, including grazing more livestock than the grasslands can support to maximize short-term economic returns and the trend away from nomadic grazing systems to a combination of lot feeding and other grazing operations where the feed comes from intensively managed agricultural crops. The large-scale expansion of coal and ore mining operations, as well as rapid urbanization and rural-to-urban migration, also has had significant environmental consequences. Finally, the increase in climate variability is causing additional disruption of grassland ecosystems.

Workshop participants discussed the efforts that have been made in East Asia to mitigate these pressures through conservation and ecological restoration policies. However, these measures were deemed ineffective because of a disconnect between local stakeholders and policy makers, scientists, and

local residents. Participants concluded that the lack of effective strategies to cope with these mounting pressures makes the region vulnerable and its sustainability questionable, and they agreed that there is a need to develop regional strategies to balance economic growth and ecological conservation.

Workshop attendees suggested that it is important to improve the knowledge of local communities on how to balance short-term economic gains and long-term sustainability of grassland ecosystems; to enhance local understanding of ecosystem sustainability through fundamental research, including long-term field observatories, socio-economic surveys, and a suite of regional climatic, hydrologic, ecosystem, and socio-economic models; and to improve management practices by adopting scientifically proven recipes for optimal land use that engages stakeholders at all stages, from design to implementation, monitoring, and evaluation.

The participants also advocated the adoption of “green civilization” policies in the region, which would restrict further industrial development, reduce livestock, and promote land uses that are more resistant to climate and anthropogenic disturbances.

The workshop program is available at [http://neespi.org/meetings/Hailar\\_2013\\_Program.pdf](http://neespi.org/meetings/Hailar_2013_Program.pdf).

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