On the Future of Inner Mongolia and Sustainability Science in China

Continued population expansion, urbanization and increasing demand for ecosystem services place intense pressures on the ecosystems that ultimately sustain human welfare. One of the most pressing examples of these ecological pressures is represented by grassland degradation that has been occurring for the past 50 years in Inner Mongolia. The purpose of this statement is to present a consensus view of the current status and long-term trajectory of the sustainability of Inner Mongolian grasslands and to recommend scientific and policy strategies that are needed to halt and reverse ecological degradation and promote long-term sustainability in this province. This represents a large, complex social-ecological dilemma that will require integrated strategies involving ecological, socio-economic and policy components. Here we offer several statements to assist in the development and evaluation of strategies to effectively counter continuing grassland degradation and to establish a path toward sustainable land use in Inner Mongolia.

Statement 1: Inner Mongolia grasslands have been heavily degraded for 50 years and they may be approaching a "point of no return." A variety of land use surveys along with comparative and experimental studies conducted in the past decade have strongly indicated that previous and current stocking rates, in conjunction with emerging patterns of climate change, in Inner Mongolia, are promoting large-scale degradation of grassland ecosystems that may soon be approaching levels from which natural ecological recovery will become unlikely and for which ecological restoration will be less effective and extremely costly. Strategies to effectively halt degradation and promote sustainability must be adopted within the near future (10-15 yrs) to minimize the scale and severity of this environmental crisis. A key component of any strategy is to reduce livestock numbers to levels that are considered sustainable for the region.

Statement 2: Inner Mongolian grasslands are human-dominated systems that require integrated socioeconomic and ecological analysis to produce viable solutions. Efforts to destock these grasslands must be accompanied by provisions to maintain or increase household incomes for the 23 million human inhabitants of the province, the majority of which are rural herders. This will require that socioeconomic and policy decisions be coupled with ecological recommendations to achieve long-term sustainability of the Inner Mongolia ecosystem.

Statement 3: We urgently recommend that an integrated "task force" of natural and social scientists as well as policy makers be formed to address the long-term sustainability of Inner Mongolia. This team should produce, within 18 months of formation, an extensive assessment of the "state of the science" as well as a comprehensive socioeconomic / ecological analysis of the regional and national implications of traditional vs. various sustainability scenarios in Inner Mongolia, emphasizing large-scale destocking accompanied by shifts towards a more diversified, value-added local economy.

Statement 4: We recommend that the scientific research community in China initiate and provide the necessary coordination and justification to develop and implement the social-ecological strategies needed to advance sustainability science. This will require development and promotion of strong incentives and advocacy positions that are capable of integrating ecological, socioeconomic, and policy considerations to meet the unprecedented challenges confronting Inner Mongolia. This approach represents a new model for environmental management in China

that is capable of effectively confronting the severity and scope of environmental issues confronting the Republic.

External participants in the Regional & Global Network of Grassland Ecosystem Research conference (August 12-14 2009, Beijing)

In agreement with the above statements:

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