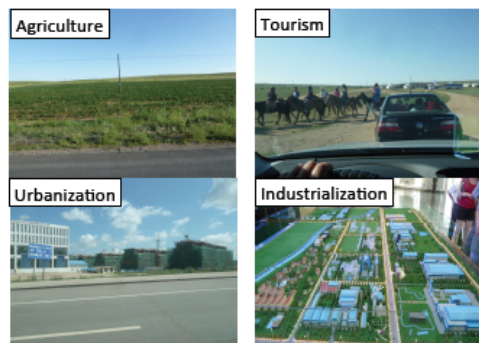


Understanding of Grassland Ecosystems under Climate Change and Economic Development Pressures in the Mongolia Plateau

Jianguo Qi¹, Jiquan Chen², Ping Shan⁵, Xuebiao Pan⁶, Yurong Wei⁴, Mingjiu Wang³, Xiaoping Xin⁷

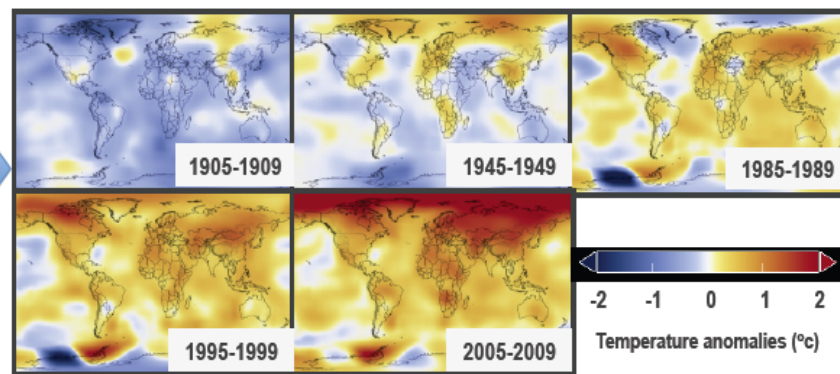
Contact information: qi@msu.edu

1. Cntr Global Change & Earth Obs, Michigan State Univ, East Lansing, MI, United States; 2. University of Toledo, Toledo, OH, United States; 3. Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China; 4. Chinese Academy of Social Sciences, Hohhot, Inner Mongolia, China; 5. ACCC Inner Mongolia Team, Hohhot, Inner Mongolia, China; 6. China Agricultural University, Beijing, China; 7. Chinese Academy of Agricultural Sciences, Beijing, China.



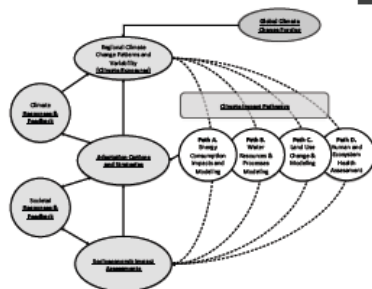
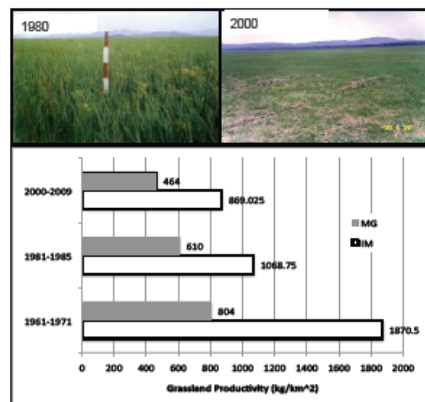
Drivers

Climate variability and socioeconomic development over the past three decades have escalated the level of stresses on grassland ecosystems. While climate variability manifested in the frequency and magnitudes in drought and snow storms has long term impact on grassland ecosystems, human modifications of the ecosystem can result in abrupt, and sometimes long term, changes in ecosystem services and functions.



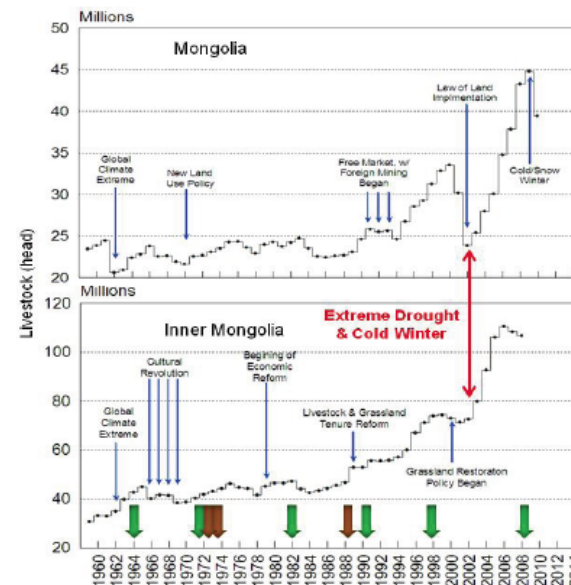
Pathway 2

Effects on grassland productivity



Pathway 1

Effects on livestock production!



Framework

Moving from responses to climate change to adaptation strategies is a major challenge in global change research. This requires a symbiotic relationship between the nature and society. Actions taken by the society in response to climate change may not be sustainable, as these actions may further escalate long-term climate change and environment degradation. Therefore, a sustainable adaptation framework should consider both climate and societal feedbacks.



Acknowledgments

Funding supports by NASA's LCLUC Program at University of Toledo, Michigan State University and University of Michigan and by DFID ACCC project in Beijing, China.