

GC33F-08: Challenges and Alternatives to Sustainable Management of Agriculture and Pastoral Ecosystems in Asian Drylands

Jiaguo Qi, Michigan State University, East Lansing, MI, United States

There is no question that human must produce additional 70% food to feed the new 2.2 billion of people on the planet by 2050, but the question is where to grow the additional food. The demand for the additional food lies not only in producing the basic resources needed to sustain a healthy lifestyle, but also from a changing diet, especially in rapidly developing countries in the dryland regions around the world. It is forecast that this demand for meat will require an additional 0.2 billion tons per year by 2050, which is almost a doubling of present meat consumption. These new demands create mounting pressures on agriculture and pastoral ecosystems and the reported trajectory of warmer and drier climate in the future increases uncertainties in food security, adding further stresses to the already stressed nations in the Asian dryland belt. Different approaches are being either proposed or practiced in the region but the question is whether or not the current practices are sustainable or optimal in addressing the emerging issues. Given the complexity and interplay among the food, water and energy, what are alternatives to ensure a sustainable trajectory of regional development to meet the new food demand? This presentation reviews existing practices and proposes alternative solutions, by specifically examining the trade-offs between different ecosystem services that drylands in Asian may provide. Preliminary analysis suggested that the current trajectory of meat and milk production is likely not on a sustainable pathway.