

Thursday, December 2, 2010

Workshop

Ecosystem Services and Improved Livelihood

16:00 - 18:00

[Parallel Workshop](#) related to plenary session 1

Oral presentation

Integrated rangeland management in drylands: Linking the functional diversity of natural resources to livelihood security

Anja Linstaedter

University of Cologne, Department of Botany, Cologne, Germany

contact-e-mail: anja.linstaedter@uni-koeln.de

Drylands account for approximately 41% of the earth's land surface and are home for 2.5 billion people. Growing human populations living in drylands and global climate change increase the land use pressure on drylands. Today, millions of people in arid and semi-arid rangelands depend directly on livestock for their livelihoods, and thus on the provision of the natural resource 'forage'. These pastoral systems are characterized by close interactions between the social and the ecological subsystem. Considering that climate change projections indicate an increased frequency of drought events and a progressive decline in rainfall, it becomes increasingly important to come to a better understanding of the complex responses that local land users show to the high environmental variability which is typical for drylands. A functional understanding of management strategies may also help to increase other societies' livelihood security in face of climatic changes and extreme climatic events. This requires a thorough analysis of human-environment interactions, which have three principal components: (i) a perception of forage quality and availability, including seasonal dynamics on local pastures, (ii) a context-specific selection of management strategies, which have in turn (iii) an impact on forage resource availability and quality of local pastures. How land users themselves perceive the state of their pastures is thus an important component of their management decisions, and in turn affects forage resources. The constituent dimensions of pasture quality, i.e., those on which herdsmen implicitly base their overall quality judgment, have to be transferred from local to scientific knowledge.

This talk will present interdisciplinary case studies on human-environment interactions in African pastoral systems. It matches implicit local valuing of fodder plants to data on plants' ecological performance on local pastures. It analyses which other criteria – besides ecological performance – might have influenced herders' valuation of species. Management decisions in years with different fodder resource availability are related to the local perception of pasture quality, in order to identify mechanisms of resilience in pastoralists' perception and management of their specific resource system. Finally it will be discussed how a high functional diversity of forage species may contribute to an increased livelihood security in dryland rangelands.