BOOK OF ABSTRACTS

I. SESSION DESCRIPTION

ID: B4

Human, livestock and wildlife (im)mobility in grassland and savannah ecosystems

Hosts:

	Title	Name	Organisation	E-mail
Hosts:	Dr.	Denise Margaret Matias	Institute for Social-Ecological Research	matias@isoe.de
Co-hosts:	Dr.	Deike Lüdtke	Institute for Social-Ecological Research	luedtke@isoe.de
	Dr.	Markus Rauchecker	Institute for Social-Ecological Research	rauchecker@isoe.de
	Dr.	Stefan Liehr	Institute for Social-Ecological Research and Senckenberg Biodiversity and Climate Research Centre	liehr@isoe.de

Abstract:

Drylands cover about 40% of the world's terrestrial surface and are important for the conservation of global biodiversity due to its unique pastoral social-ecological systems and its ability to store vast amounts of carbon in its soils. One of the key characteristics of both wildlife and pastoralist communities in drylands is mobility, where distinct herbivores such as the elephant in Africa or the Mongolian gazelle in Mongolia track changing natural resources while pastoralist communities move livestock herds in search of fresh pasture and water. Currently, many drylands worldwide are undergoing social-ecological, social-economic and social-political changes that affect the mobility of both wildlife and pastoralists. In turn, movement changes impact ecosystem functions and biodiversity. Shifts in movement patterns are driven in part by the immense challenges of land use under changing climatic conditions, coupled with an already apparent, widespread degradation of savannah rangelands. A more sedentary lifestyle and the migration of members of pastoralist and other communities to urban centers for economic reasons change movement patterns. Furthermore, powerful institutions and actors of immobility like the state or private property shape the mobility of wildlife and people with their livestock through parcelling out land,

territorial boundaries, and infrastructure. The session asks to what extent social-economic, social-political, and social-ecological changes affect movement patterns of humans, livestock and wildlife, and to what extent the change in movement patterns affect grassland and savannah ecosystems.

Goals and objectives of the session:

The session aims to discuss current research on drylands and savannah ecosystems specifically on the issue of (im)mobility of wildlife and pastoralist communities. We encourage inter- and transdisciplinary presentations that provide new perspectives and broad insights into 1) ecosystem services and disservices or the synergies and trade-offs regarding movements in grassland and savannah ecosystems shifting from mobile to immobile patterns or vice versa; 2) existing policies and regulations that influence ecosystem services in grassland and savannah ecosystems; 3) potential land-use conflicts in the context of mobility and immobility or sedentarization of wildlife, pastoralist and other communities; and 4) how potential solutions might be approached. These could contribute to a deeper understanding of the challenges and opportunities of future management and conservation strategies in grassland and savannah ecosystems especially with regard to human, livestock and wildlife (im)mobility or sedentarization.

Planned output / Deliverables:

We plan to put together a special issue in an open access journal or a joint publication from the contributions of the session.

Related to ESP Working Group/National Network:

Biome Working Groups: BWG 4 – Drylands

II. SESSION PROGRAM

Date of session: Monday, 7 June 2021
Time of session: 13:30 – 15:00

Timetable speakers

First name	Surname	Organization	Title of presentation
Batbuyan	Batjav	Center for Nomadic Pastoralism Studies	The role of mobility in ecological knowledge of the Eastern Steppe of Mongolia
Marion	Mehring	Institute for Social-Ecological Research	Rural to urban migration in Mongolia – social-ecological conditions for a stepwise process
Markus	Rauchecker	Institute for Social-Ecological Research	State's Immobility vs. Pastoralist Mobility – A Case Study of Mongolia and Namibia

First name	Surname	Organization	Title of presentation
Diego Augusto	Menestrey Schwieger	University of Cologne	Understanding desertification at the community level in Namibia's eastern communal rangelands: a comparative study integrating social and ecological insights
Ronja	Kraus	Institute for Ecological Research	The conflict-loaded potential of wildlife management for sustainable savannah use: the example of human-elephant interactions in Namibia
Julia	Rouet-Leduc	German Centre for Integrative Biodiversity Research & Helmholtz-Centre for Environmental Research	Grazing for ecosystem services in Europe: motivation and challenges of land users for sustainable grazing management
Ulan	Kasymov	Technische Universität Dresden, International Institute Zittau	A global review of grassland policies and their impact on the conservation and sustainable use of dryland ecosystems

The session will be a round-table discussions.

III. ABSTRACTS

Abstracts are ordered based on the session program. The first author is the presenting author unless indicated otherwise.

1. Type of submission: Abstract

B. Biome Working Group sessions: B4 – Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

The role of mobility in ecological knowledge of the Eastern Steppe of Mongolia

Presenting author: Batbuyan Batjav
Other author(s): Denise Margaret Matias, Marion Mehring
Affiliation: Centre for Nomadic Pastoralism Studies; Institute for Social-Ecological Research, Germany
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Mongolia has undergone a major political transition in 1990s, alongside the dissolution of countries with a socialist system of economy. One consequence of this political transition is the privatization of collective herds, which previously had central support from the government. In light of this privatization process, other types of herders different from the nomadic pastoralists have emerged; foremost are absentee herders who often take care of herds owned by someone else. Additionally, occupational preference has shifted from nomadic pastoralism to urban labor opportunities especially with the new generation. This limits the opportunities for ecological knowledge transmission, whether on an inter- or intragenerational level. We aim to present results of field work conducted in the Eastern Steppe of Mongolia in 2019 and 2020, which surveyed nomadic pastoralist herders and identified the role of mobility in the transmission of ecological knowledge. Specifically, this presentation discusses the impacts of changing Mongolian lifestyles on nomadic pastoralism traditional ecological knowledge and local (new) knowledge, created in the course of the changing political landscape in Mongolia. Our presentation will provide social-ecological insights on nomadic pastoralism in Mongolia and recommendations on how to preserve traditional ecological knowledge related to this practice.

Keywords: nomadism, intergenerational knowledge, intragenerational knowledge, network, herding

2. Type of suission: Abstract

B. Biome Working Group sessions: B4 - Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

Rural to urban migration in Mongolia – social-ecological conditions for a stepwise process

Presenting author: Marion Mehring
Other author(s): Anika Tarne, Batbuyan Batjav, Denise Matias
Affiliation: Friedrich Schiller University of Jena, Germany
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Since the 1990s, Mongolia's capital city Ulaanbaatar has recorded steady and rapid population growth due to rural-urban migration. So far, little is known about how the social and ecological conditions of migration interact. Thus, in our study we investigated the rural-urban migration process from the countryside to the capital in the Eastern Steppe conducting semi-structured interviews. Our results show

that this rural-urban migration often follows a stepwise process from smaller settlements to larger urban agglomerations. The results also demonstrate a complex interplay between the prevailing social, economic, and ecological factors. While social factors (kinship, education) show the same relevance at each step of migration, ecological factors such as the occurrence of dzud or harsh winter seem more relevant at the early stages, from the steppe to the sum or village centres. Ecological factors only seem to rank second in importance, after social reasons. Economic reasons are also revealed to be very significant but seem most relevant the closer the migrations are to the capital. These results are essential in order to cope with current and future challenges of population development and find solutions to enable traditional Mongolian nomadism even under a modern lifestyle. With this oral contribution we present our current research from the BMBF project MORE STEP – Mobility at Risk – Sustaining the Mongolian Steppe Ecosystem.

Keywords: Dzud, Kinship, migration, nomadism, social-ecological vonditions

3. Type of submission: Abstract

B. Biome Working Group sessions: B4 – Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

State's Immobility vs. Pastoralist Mobility – A Case Study of Mongolia and Namibia

First author: Markus Rauchecker
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Nation states play a crucial role in governing dryland's social-ecological systems. The state categorises the complex world to break it down into manageable information sets. One of the key categories for the action of the modern state is territory delimited by boundaries. Political territories such as the national territory, provinces and municipalities have the function to order social and economic structures and processes with direct and side effects on ecologic ones. Furthermore, there are also explicit territorial categorisations for nature such as national parks. This mode of state action collides with actual pastoral social-ecological systems based on wildlife and pastoralists' mobility as flexible responses to the dynamic environment are crucial for the sustainability of drylands' ecosystems. We use the two case

studies Mongolia and Namibia to show different state interventions in pastoral social-ecological systems. Both cases share common characteristics such as low population density, a history of pastoralist lifestyles and comparable ecosystems such as steppe and savannah. Furthermore, livestock herding is recognised as a key economic sector. However, the countries took different paths in history. In the territory of nowadays Namibia the pastoralist social-ecological systems were heavily disrupted during colonial rule, while the pastoralist systems in Mongolia – although being also affected in colonial and socialist times – were comparatively conserved. Therefore the question pops up, how these states manage pastoralists' mobility today. We analyse to what extent immobility and mobility are prioritised in current rangeland policies in Mongolia and Namibia and which effect this can have on pastoral social-ecological systems in both countries and the respective ecosystem services. We will show that the state sticks to its territorial categories even in conservation and management policies for steppe and savannah rangelands. We analyse the relevant policies and qualitative interviews with state officials and pastoralists with Qualitative Content Analysis and Process Tracing methods.

Keywords: state, immobility, pastoralism, Namibia, Mongolia

4. Type of submission: Abstract

B. Biome Working Group sessions: B4 – Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

Understanding desertification at the community level in Namibia's eastern communal rangelands: a comparative study integrating social and ecological insights

First author: Diego Augusto Menestrey Schwieger
Other author(s): Faith Munyebvu – Chambara, Ndamonenghenda Hamunyela
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Land degradation is a major environmental and socio-economic concern in Namibia's semi-arid communal lands. To date, however, only few studies have taken a community-level perspective to scrutinize local social-ecological dynamics of desertification and their interconnectedness with broader socio-historical and structural processes. This study addresses this research gap by presenting three case studies from Namibia's eastern communal areas. By implementing comparative and interdisciplinary

data collection procedures, this study illustrates the current state of three locally shared rangelands and explains the multilayered anthropogenic processes that contributed to these conditions so far. Based on these case studies, the paper discerns the provisions that have helped to prevent the (further) loss of grass vegetation and discusses whether these requisites can be transferred and applied to other settlements in the region.

Keywords: Otjiherero speaking communities, communal rangelands, land degradation, desertification, Namibia

5. Type of submission: Abstract

B. Biome Working Group sessions: B4 – Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

The conflict-loaded potential of wildlife management for sustainable savannah use: the example of human-elephant interactions in Namibia

Presenting author: Ronja Kraus
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Savannahs provide for essential ecosystem services including pasture for livestock farming. Due to population growth and socio-economic pressures, there is an increasing demand on these ecosystem services. However, climate change, human encroachment and intensified land use are threatening African savannas. In contrast to livestock, wildlife-based management is perceived to be better adapted to these ecosystems. In Namibia, wildlife-focused strategies increased over the last decades. Yet, local stakeholders and authorities are challenged by conflicts between humans and wildlife. Especially where farmers and elephants share a landscape, conflicts are common. Fences are used for conflict prevention but restrict the animals' natural movement patterns. In this study, the cumulative impact of game-proof fences and land management on the landscape permeability for elephant movement is evaluated for farmland south-west of the Etosha National Park. An interdisciplinary approach served to understand the human-elephant interactions and to evaluate the impediment of landscape connectivity that is driven by socio-economic activities and natural landscape features. Semi-structured interviews were conducted with freehold farmers and experts including participatory mapping that provided for the information on

the location of fences and on farm management. GPS records of seven collared elephants served to investigate habitat preferences and least-cost analysis facilitated the evaluation of connectivity between identified areas of elephant preference. The results suggest that farmer-elephant interactions may be seen as a conflict over natural resources and that game-proof boundary fences combined with a certain land management do not inhibit connectivity completely but rather shift corridors and potential conflicts locally. A coordinated landscape-wide approach to align elephant movement requirements and human activities, based on local stakeholder and expert knowledge, can guide a peaceful human-elephant-coexistence. Thus, wildlife-oriented management strategies might find more acceptance and function as sustainable land use options that have the potential to restore and maintain healthy rangelands with its ecosystem services.

Keywords: human-elephant conflict, movement ecology, landscape connectivity, least-cost analysis, interdisciplinarity

6. Type of submission: Abstract

B. Biome Working Group sessions: B4 – Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

Grazing for ecosystem services in Europe: motivation and challenges of land users for sustainable grazing management

First author: Julia Rouet-Leduc
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In Europe, a dual trend of land abandonment and agricultural intensification creates changes in landscapes that have important consequences on ecosystem services provision. Shifts in practices in traditional animal rearing such as pastoralism and multiple incentives for increased production lead to unsustainable agricultural and grazing systems. This contrasts with more traditional livestock systems, where food production often goes hand in hand with the provisioning of multiple other public goods and services. Also, active rewilding is increasingly advocated to promote biodiversity and ecosystem services, especially in areas undergoing land abandonment. However, the benefits of different types of grazing are highly dependent on the environmental and social context. Therefore, we sought to understand what

challenges land users aiming to promote sustainable grazing are experiencing, and how these challenges can be overcome. Therefore, we conducted 69 semi-structured interviews in 8 different cases studies in Europe with land users that conducted different types of grazing management (intensive, extensive, rewilding with semi-wild herbivores, etc.) to explore the perceived impact of their management on multiple ecosystem services. We also compared across the areas the different incentives, challenges and motivations of land users to conduct different types of management. We investigated what are the motivations for land users to conduct practices that they perceive as beneficial for ecosystem services, and what are the challenges of these practices in a context of change. We also explore opportunities for rewilding with large herbivores as potential alternative for traditional land management practices such as pastoralism in areas undergoing abandonment and how it could be facilitated by European policies.

Keywords: grazing, rewilding, land management, land user

7. Type of submission: Abstract

B. Biome Working Group sessions: B4 – Human, livestock and wildlife (im)mobility in grassland and savannah ecosystem

A global review of grassland policies and their impact on the conservation and sustainable use of dryland ecosystems

First author: Ulan Kasymov
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Sedentarisation of nomadic populations and fragmentation of land use leads to the decline of pastoralists' and wildlife mobility in grasslands worldwide. This trend is concerning as flexible responses to the dynamic environment are crucial for the sustainability of dryland ecosystems. To counter these alarming trends, policymakers design and implement new grassland use and conservation policies that incorporate traditional and new land management approaches, including designation and management of protected areas, land tenure, community-based management, assessment and monitoring of grasslands, and resource use planning. This article presents a global literature review of grassland

management and conservation policies that promote the conservation and sustainable use of grassland ecosystems including the sustainable provision of their ecosystem services. We employ the policy mix concept in our analysis by differentiating between regulatory, economic and information-based policy instruments, their mix, governance modes and discuss their impact. Our study identifies key constraints and opportunities of these policies, governance modes and instruments.

Keywords: global review, policy mix, grassland management