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Mobility at risk: Sustaining the Mongolian Steppe Ecosystem – societal transformation processes

**Stakeholder analysis and identification of drivers
and potential solution pathways**



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Mobility at risk: Sustaining the Mongolian Steppe Ecosystem – societal transformation processes

Stakeholder analysis and identification of drivers and potential solution pathways

Stakeholder Workshop, Ulaanbaatar, Mongolia,
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Executive summary

“MORE STEP – Mobility at risk: Sustaining the Mongolian Steppe Ecosystem” is a collaborative and transdisciplinary research project conducted by Mongolian and German partners and funded by the German Ministry of Education and Research. The main aim is to bring together social and ecological sciences to identify societal drivers that can lead to ecological tipping points in the Mongolian Steppe ecosystem.

In order to develop a stakeholder engagement strategy and identify the most pressing issues with regard to societal change and ecological sustainability in the Mongolian Steppe landscape, a stakeholder analysis including a stakeholder workshop was carried out in September 2017 in Ulaanbaatar, Mongolia. As a result of the stakeholder analysis, a comprehensive list of stakeholders was compiled. The different stakeholder groups were classified into an interest-influence matrix, with categories showing who to inform, collaborate with, involve, and consult. The participants of the stakeholder workshop identified four main societal transformation processes affecting the Mongolian Steppe ecosystem and then defined different research needs related to these transformation processes.

This documentation summarises the workshop’s outcomes and serves as a basis for further stakeholder engagement in the MORE STEP project.

Mongolian summary

“MORE STEP – Нүүдэл, шилжилт хөдөлгөөний эрсдэлд: Монгол орны тал хээрийн экосистемийн тогтвортой байдлыг хадгалах” судалгааны төсөл нь Холбооны Бүгд Найрамдах Герман Улсын Засгийн Газрын Боловсрол, Судалгааны Яамны санхүүжилттэй Монгол Улс ба ХБНГерман Улсын хамтын ажиллагаа мөн салбар хоорондын судалгааны төсөл юм. Энэхүү судалгааны төслийн үндсэн зорилго нь нийгмийн болон экологийн шинжлэх ухааныг нэгтгэн улмаар Монгол орны тал хээрийн экосистемийн экологийн шилжилтийн утга (ecological tipping point) –ыг нөхцөлдүүлж буй нийгмийн хүчин зүйлсийг тодорхойлох юм.

Монголын тал хээрийн экологийн тогтвортой байдал, нийгмийн өөрчлөлтөд тулгамдаж буй асуудлуудыг тодорхойлох, оролцогч талуудын оролцооны стратегийг хөгжүүлэхийн тулд 2017 оны 9-р сард Улаанбаатар хотод оролцогч талуудын уулзалт зохион байгуулсан. Оролцогч талуудыг тодорхойлох судалгааны үр дүнд олон төрлийн оролцогч талуудын төлөөлөгчид уулзалтад хүрэлцэн ирж оролцсон юм. Эдгээр оролцогчид талуудын төлөөлөгчид мэдээллэх, хамтрах, оролцох, зөвлөх гэсэн бүлгүүдийг илэрхийлж буй сонирхол/нөлөөлөл хэмээх матрицид хуваагдан багаар ажилласан юм.

Оролцогч талуудын уулзалтын оролцогчид Монголын тал хээрийн экосистемд нөлөөлж буй нийгмийн шилжилтийн дөрвөн үндсэн үйл явц, эдгээртэй холбоотой шаадлагатай судалгаануудыг тус тус тодорхойлсон. Оролцогч талуудын уулзалтаас гарсан үр дүнгүүд мөн MORE STEP төсөлд оролцогч талуудын цаашдын оролцоог энэхүү тайланд нэгтгэн дүгнэсэн болно.

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Background

The stakeholder workshop was part of the research project “MORE STEP – Mobility at risk: Sustaining the Mongolian Steppe Ecosystem”. MORE STEP is a collaborative and transdisciplinary research project conducted by Mongolian and German partners and funded by the German Federal Ministry for Education and Research (BMBF), (01LC1710B). The main aim is to identify societal drivers that can lead to ecological tipping points in the Mongolian Steppe ecosystem. The objective is the early identification of possible critical consequences for nature and society, and the development of adapted strategies for a sustainable transformation process. Land degradation, urbanisation and changes to the nomadic way of life are central themes addressed by the project. The project particularly emphasises the importance of mobility when it comes to wildlife and livestock in the context of societal change. In particular, the MORE STEP project aims to:

- Bring social and natural sciences together to identify societal drivers leading to ecological tipping points
- Identify possible consequences for nature and society, including, for example, land degradation, reduced sustainability of ecosystems, changes to the nomadic way of life, mobility of wildlife and livestock in the context of societal change
- Contribute to the sustainable development of the Mongolian Steppe ecosystem

As a collaborative project, the MORE STEP project pursues a transdisciplinary approach. Consequently, the project aims to integrate not only different scientific disciplines but also non-scientific project partners. Thus, with this stakeholder workshop we seek to identify the relevant stakeholders to be involved in the further course of the project.

Project webpage: <https://www.morestep.org>

1 Methods

Aim of the workshop

Within the MORE STEP project, stakeholders are addressed both as interested parties and as sources of expert knowledge. When applying a transdisciplinary research mode, as in MORE STEP, an early involvement of stakeholders is not only helpful to create an atmosphere where everybody feels included and valued, but also mandatory with respect to the co-design of a research project (OECD 2015). Such an atmosphere is also important to reduce existing power disparities and avoid the underrepresentation of individual positions and views in the project (ibid.).

Thus, the MORE STEP workshop aimed to:

- Develop a stakeholder engagement strategy as part of the research process
- Identify the most pressing transformation issues with regard to societal change and ecological sustainability in the steppe landscape
- Identify the knowledge needed by the different stakeholders for sound decision making

The workshop sought to assemble knowledge and experiences on the part of the different stakeholders to identify the most pressing issues with regard to societal change and ecological sustainability in the steppe landscape. This knowledge is crucial in order to evaluate the main goals of the project and to frame its further progress in the given problem context. Furthermore, the identified key transformation issues form the basis for assessing the key drivers of societal change. The latter are important for the formulation of future scenarios.

Finally, the workshop aimed to create the basis for developing a stakeholder engagement strategy that addresses all the different stakeholder perspectives. Generally, not all stakeholders share the same interest, capabilities, or influence to support the project's goal, or they may have differing knowledge and/or opinions on the topic of the project. In order to integrate this diversity, we followed a three step-approach: stakeholder identification, analysis and integration (Durham et al. 2014). The stakeholder identification was conducted ahead of the workshop. Consequently, the workshop particularly focused on the analysis of stakeholders according to their interests and influence. This data forms the basis for the further integration of the stakeholders during the course of the project.

Workshop implementation

The workshop followed a step-wise approach, alternating input and interactive sessions (Table 1).

Table 1: Detailed workshop agenda, including the aim of the different sessions

	Topic	Aim	Questions to the audience
INPUT SESSION	MORE STEP project	Presentation of the overall aim	
INTERACTIVE SESSION 1	Societal transformation	Identification of main societal processes	As an expert in your field, what would you say was the most important problem/societal change the people are facing in Mongolia?
INTERACTIVE SESSION 2	Main societal processes	Identification of drivers and potential solution pathways	As an expert in your field, what would you say were the main drivers (e.g. direct/indirect; local, national, international) triggering the societal change? As an expert in your field, what do you think should be changed and by whom?
REFLECTION SESSION		Identification of re-search outcomes needed and feedback from participants	Based on your personal background, what kinds of research outcome are particularly needed/helpful for you?

Data collection and analysis

As described above (see section *Aim of the workshop*), the stakeholder analysis was conducted according to Durham et al. (2014) following the three steps of identification, analysis and integration.

STAKEHOLDER IDENTIFICATION: The stakeholder identification was conducted ahead of the workshop. In an iterative process, a list of relevant stakeholders was created via a literature search and expert consultation. In addition, we used the knowledge and experience of the workshop participants to supplement and confirm the stakeholder list.

STAKEHOLDER ANALYSIS: The stakeholder workshop served partly to collect data for the stakeholder analysis. The different break-out groups during the INTERACTIVE SESSIONS (see section *Workshop implementation*) accompanied by a history log formed the basis for the following structural analysis.

The structural analysis helps to sort stakeholders according to degrees of interest and influence (Schramm 2012; Litschel/Schramm 2010). Based on this analysis, it is possible to differentiate four respective groups for subsequent engagement in the project:

- 1) **Collaborate:** stakeholders with relatively high influence on and interest in the project outcomes. Ensure close collaboration throughout the project duration
- 2) **Consult:** influence is markedly lower while their interest remains high. Consult these stakeholders throughout the project to get their feedback on recent and envisaged developments
- 3) **Involve:** highly influential stakeholders with lower interest or capacity to collaborate. Involve them by maintaining close contact throughout the project “to ensure that their concerns and aspirations are understood, considered and, where appropriate, incorporated into decision-making” (Durham et al. 2014: 43). This involvement is crucial, since any opposing or neglected interests among these influential stakeholders could pose a threat to the project’s success.
- 4) **Inform:** stakeholders that have comparably low interest in and influence on the project outcomes. It may be sufficient to keep them informed about the project’s progress, but such information should be specific and tailored to the stakeholder’s needs.

We used the analytic hierarchy process (AHP) to assess the aforementioned differences between the stakeholders. In applying the AHP, we treated interest and influence individually and compared every possible combination of two stakeholders on an ordinal scale from equivalent (1) to much higher/lower (9) interest and influence, respectively (Saaty/Vargas 2012; Drees/Liehr/Brenda 2018; Woltersdorf et al. 2018). Note that international NGOs and scientific institutes were grouped in two shared categories, respectively. We assumed there to be little differentiation within these groups, which were, however, potentially capable of inflating the AHP. After every pair of stakeholders has been rated, the AHP online tool (Goepel 2018) checks for consistency among the ratings and produces a ranking of the stakeholders. As a result of this analysis, an interest-influence matrix is created, depicting the different stakeholders according to their role for further engagement.

2 Results

Stakeholder identification and analysis

The stakeholder identification revealed five different categories of relevant stakeholders for the MORE STEP project: 1) government/administrative bodies; 2) intergovernmental organisations, 3) non-governmental organisations (NGO); 4) industry (mining); and 5) science (see Appendix, Stakeholder identification). Forty participants representing all five categories took part in the stakeholder workshop. Only for the 'Industry' (mining) category did no representative from an inter- or multinational company participate. In addition, national and international NGOs working on wild-life and nature protection were quite well represented. However, further effort might be necessary to address organisations with a focus on sustainable rural development, migration or urbanisation.

The interest-influence matrix shows the classification resulting from the stakeholder analysis (Figure 1). The x-axis represents the level of interest, while the y-axis depicts the level of influence of the different stakeholders. In general, the four categories of stakeholder involvement can be distinguished as described in section *Data collection and analysis*: collaborate, involve, consult or inform.

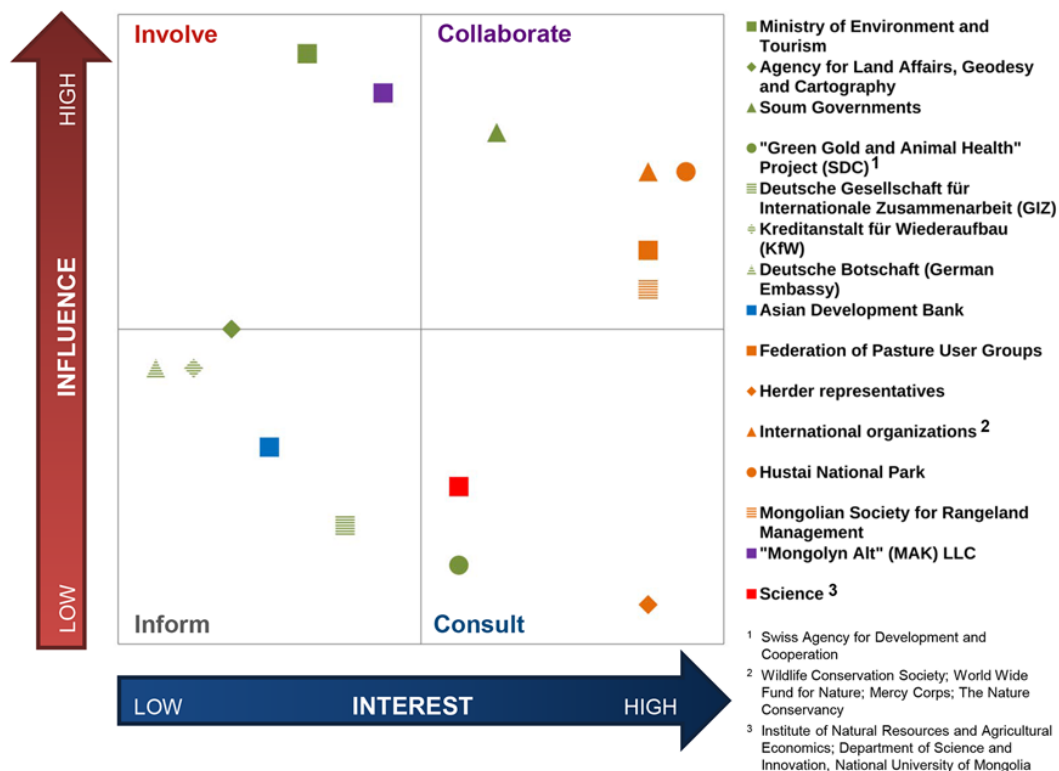


Figure 1: Interest-influence matrix for stakeholder involvement in the MORE STEP project. 1) Government/administrative bodies in green, 2) intergovernmental organisations in blue, 3) non-governmental organisations (NGO) in orange, 4) industry (mining) in purple, 5) science in red.

The group of stakeholders whose involvement consists mainly of receiving a steady flow of information comprises intergovernmental organisations (Asian Development Bank) and foreign government agencies such as the German embassy, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and the Kreditanstalt für Wiederaufbau (KfW).

The national government and national government agencies are stakeholders that are highly influential but with a comparably low capacity to collaborate. The main members of this group present at the workshop were the Agency for Land Affairs, Geodesy and Cartography (ALAGAC) and the Ministry of Environment and Tourism. While the ALAGAC is on the border between the stakeholders to inform and those to be involved, the Ministry is close to industry representatives.

Foreign governmental agencies (such as the “Green Gold and Animal Health” project funded by the Swiss Agency for Development and Cooperation), science, and NGOs (herder representatives) are in the lower right corner of the matrix under “Consult”. These organisations will be consulted to get their feedback on any recent and envisaged project developments. The herder representatives represent the key actors of the Mongolian Steppe ecosystem and it is therefore vitally important to engage with them.

The local government (*sum*¹ government), NGOs (national: Federation of Pasture User Groups, Mongolian Society for Rangeland Management, the Hustai National Park – HNP, and international: Wildlife Conservation Society – WCS, the World Wildlife Fund – WWF) are in the upper right corner under “Collaborate”. There will be close collaboration on the part of these stakeholder groups throughout the project. The HNP is a central part of the study area and WCS has long experience in wildlife monitoring in Mongolia, which makes these two bodies valuable partners in the consortium of the MORE STEP project.

In summary, the stakeholder analysis applied here lays the foundation for the third step of the stakeholder engagement: stakeholder integration during the course of the project. The results define how to integrate the respective stakeholders.

Main societal processes of transformation

As a result of the INTERACTIVE SESSIONS 1 and 2, the main societal processes of transformation affecting the Mongolian Steppe ecosystem, the driving factors and potential solution pathways were identified. Figure 2 depicts the Mongolian Steppe ecosystem as social-ecological system under transformation.

¹ A *sum* (district) is the second level, an *aimag* (province) is the first level of administrative subdivision of Mongolia

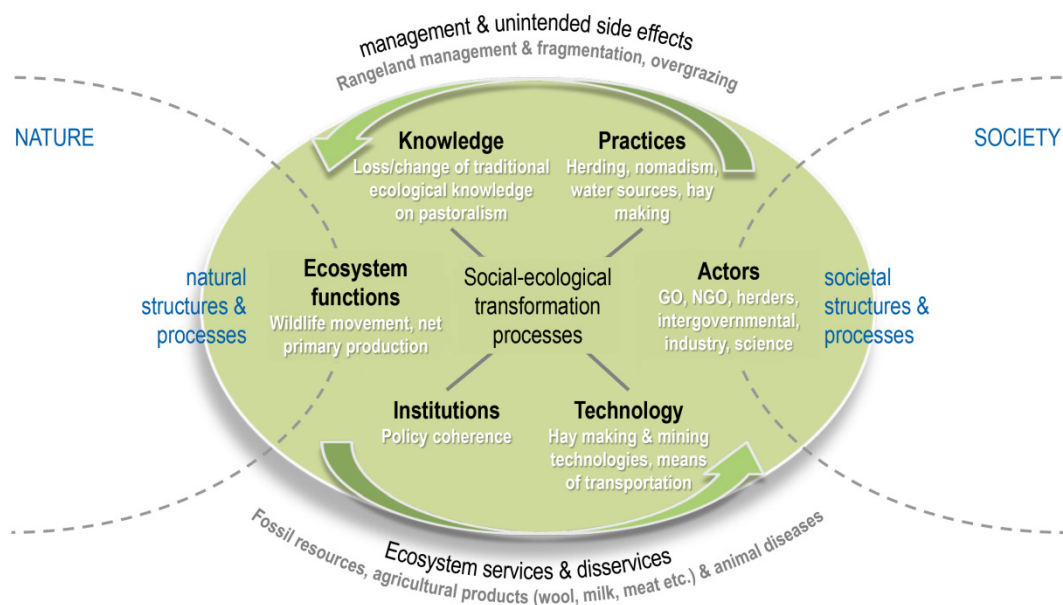


Figure 2: Conceptual framework of the Mongolian Steppe ecosystem as a social-ecological system or SES under current transformation (source: Mehring et al. 2017, modified).

In summary, the workshop participants identified four different societal processes; 1) changing lifestyles, 2) mobility of herders, 3) governance, and 4) alternative types of land use.

Changing lifestyles

Problem description	Main drivers of change	Potential solution pathways
Rural to urban migration: number of herders is constantly decreasing	Rapid socio-economic development Poverty in rural areas Climate change Information and communication technology (ICT) and other attractions missing in urban areas	Support socio-economic development in rural areas Support livelihoods and adaptation strategies in rural areas Develop ICT in rural areas
Loss of nomadic pastoralism in rural areas: lack of work force and loss of traditional local knowledge	Poverty in rural areas Cost of living too high in rural areas	Increase capacity building, education (traditional local knowledge) and awareness raising Increase attractiveness of rural lifestyle Support mobility in rural areas: seasonal settlements of winter and spring camps; implement a model of infrastructure that is appropriate for the lifestyle

Mobility of herders

Problem description	Main drivers of change	Potential solution pathways
Number of livestock: increased tremendously since 1990s	Lack of a joint policy on animal health, causing an increased number of livestock for economic purposes	Reduce number of livestock: <ul style="list-style-type: none"> – improve livestock breeds – improve animal health and veterinary service to better sell livestock on the international market – improve the value chain
Sedentarisation: less mobility of livestock and concentration in central regions, causing land degradation and soil erosion	Infrastructure development, including highways, roads, the railway Lack of water points Increased mining activities Competition between absentee/urban/commercial and traditional herders Changing lifestyles: herders prefer short-term income rather than commitment to environmental protection, including pasture protection	Increase number of water points and support their maintenance Policy regulation: introduction of new policies and coordination of existing ones

Governance

Problem description	Main drivers of change	Potential solution pathways
Lack of policies: 3 types of property rights: common land, leasehold and land ownership	Planning and policies are coordinated separately	Comprehensive planning and policy of land coordination: <ul style="list-style-type: none"> – Improve herders' rights; e.g. guaranteed places for winter and spring camps – Better control of mining activities
Lack of integration	Each ministry has its own approach to coordination and decision making Policies change from election to election	Better coordination of <ul style="list-style-type: none"> – different policies such as licenses for land use and mining – transparency of planning and policies; e.g. in a database accessible for everyone Clarification of conservation and user rights of herders (wildlife and herbal plant extraction)

Alternative types of land-use

Problem description	Main drivers of change	Potential solution pathways
Alternative types of land use negatively impact the ecosystem: mining, oil field, medicinal plant collection, hunting, illegal trade, absentee herder, crop planting (rapeseed)	Rapid socio-economic development Poverty in rural areas	Better regulation and enforcement of existing laws Strengthening of herder cooperatives
Hay making	Rapid socio-economic development Poverty in rural areas	Better regulation on hay making: – prohibition of techniques that prevent the rehabilitation of the ecosystem – regulate export

Research needs

The research needs identified by the workshop participants include recommendations related to the mode of research and different topics. Regarding the research mode, participants especially highlighted the need for a cooperative approach that involves a variety of different stakeholders and their active participation. While this workshop marks an important milestone to achieve such cooperation, special attention should also be paid to the integration of actors from the local level, in particular local governments of remote areas. Thirdly, it was emphasised that existing data and results of previous projects should be used and integrated.

Specific research topics worth envisaging are as follows:

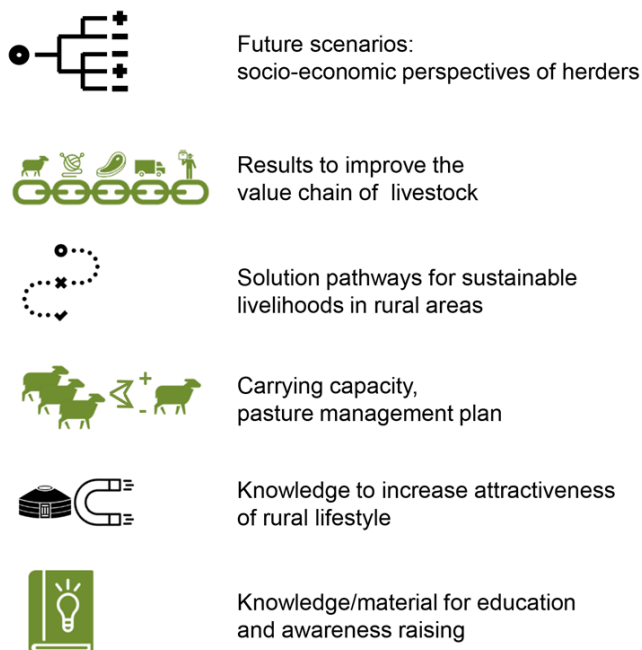


Figure 3: Research topics identified by stakeholders.

Appendix

Stakeholder identification

Stakeholder group	Name of organisation	Stakeholder workshop participation
Government/administrative bodies		
National government	Ministry of Construction and Urban Development	
	Ministry of Education, Culture and Science	
	Ministry of Environment and Tourism	X
	Ministry of Food, Agriculture and Light Industry	
	Ministry of Health	
	Ministry of Road and Transport	
	Ministry of Road and Transport	
	Ministry of Energy	
	Ministry of Labour and Social Protection	
National governmental agencies	Agency for Land Affairs, Geodesy and Cartography (ALAGAC)	X
	National Agency for Meteorology, and Environment Monitoring (NAMEM)	
	General Authority of State Registration	
	Veterinary and Animal Husbandry Agency	
Local/ <i>aimag</i> / <i>sum</i> government	Governors and Mr.L. Lkhagvasuren (Scientific advisor to the Dornod Governor) from Dornod (<i>Aimag</i> Government, Matad <i>sum</i> government, protected area) and Tuv	
	Dornod Governor's Office	X
	<i>Sum</i> governors around Hustai national park	
	Altanbulag <i>sum</i> government, Tuv <i>aimag</i>	X
	Bayankhangai <i>sum</i> government, Tuv <i>aimag</i>	X
	Argalant <i>sum</i> government, Tuv <i>aimag</i>	X
	Sukhbaatar Governor's Office	X
Foreign government agencies	"Green Gold and Animal Health" project funded and implemented by Swiss Agency for Development and Cooperation (SDC)	X
	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	X
	KfW	X
	Embassy of Germany	X
Intergovernmental organizations		
	United Nations Development Programme (UNDP); Daniela Gasparikova, DRR or B. Bunchingiv, Programme Officer for Environment	
	United Nations Environment Programme (UNEP)	
	Asian Development Bank (ADB) – rangeland related project	X
	World Bank	
Non-governmental organizations (NGO)		
Interest groups/unions	(<i>Aimag</i>) Pasture User Groups (APUG) in 13 <i>aimags</i> (particularly the <i>aimags</i> : Dornod and Töv); PUG Association head is Mr. Gankhuyag based in Ulaanbaatar	
	Federation of Pasture User Groups	X
	Herder representative from Altanbulag <i>sum</i> , Tuv <i>aimag</i>	X
	Herder representative from Bayankhangai <i>sum</i> , Tuv <i>aimag</i>	X
	Herder representative from Argalant <i>sum</i> , Tuv <i>aimag</i>	X

International organisations	International Organization of Migration Mongolia	
	IUCN Mission	
	WWF	X
	WCS	X
	Mercy Corps	X
	Global Green Growth Institute	
	The Nature Conservancy	X
National (and bilateral) organisations	Association for Sustainable Rural Development	
	Hustai National Park	X
	Mongolian Environment and Development Association (JASIL)	
	Mongolian Society for Rangeland Management (MSRM)	X
	American Center for Mongolian Studies (ACMS)	
Industry (Mining)		
National	Erdenet Mining Corporation	
	Mongolia Energy Corporation Limited	
	MAK Corporation	X
Multinational/ national (non-Mongolian)	PetroChina	
	Rio Tinto Group	
	Turquoise Hill Resources	
Science		
	Institute of Natural Resources and Agricultural Economics (INRAE)	X
	School of Economics and Business, Mongolian University of Life Sciences (MULS)	X
	Department of Science and Innovation, National University of Mongolia	X
	Institute of Geography and Geocology, Mongolian Academy of Science	X

Participants list

No	Full name	Organization
1	D. Altantsetseg	Herder representative from Bayankhangai <i>sum</i> , Tuv <i>aimag</i>
2	U. Amarzaya	Sukhbaatar Governor's Office
3	D. Batbold	WWF Mongolia
4	B. Batbuyan	Institute for Geoecology
5	B. Batjargal	Argalant <i>sum</i> government, Tuv <i>aimag</i>
6	N. Batmunkh	Altanbulag <i>sum</i> government, Tuv <i>aimag</i>
7	D. Batnyambuu	National University of Mongolia, Department of Science and Innovation
8	J. Batsaikhan	Agency for Land Affairs, Geodesy and Cartography (ALAGAC)
9	S. Bayarkhuu	Ministry of Environment and Tourism
10	P. Bolor	Mercy Corps
11	S. Bolortsetseg	WCS Mongolia
12	D. Borchuluun	National University of Mongolia, Department of Science and Innovation
13	D. Burmaa	Federation of Pasture User Groups
14	B. Buuveibaatar	WCS Mongolia
15	B. Chimeddorj	WWF Mongolia
16	Ts. Dashpurev	Hustai National Park
17	V. Delger-Ochir	Herder representative from Argalant <i>sum</i> , Tuv <i>aimag</i>
18	D. Dorligsuren	Mongolian Society for Rangeland Management (MSRM)
19	Lukas Drees	ISOE – Institute for Social-Ecological Research
20	Ts. Enkh-Amgalan	Swiss Development Cooperation "Animal Health and Greengold Project"
21	B. Enkhtsetseg	KfW Mongolia
22	Sh. Enkhtuvshin	WCS Mongolia
23	T. Enkhzaya	MAK Corporation
24	B. Erdenebayar	Dornod Governor's Office
25	T. Erdenechuluun	Institute of Natural Resources and Agricultural Economics (INRAE) and Mongolian University of Life Sciences, School of Economics and Business (MULS)
26	G. Ganzorig	School of Economics and Business, Mongolian University of Life Sciences
27	Marion Mehring	ISOE – Institute for Social-Ecological Research
28	Georg Mieke	University Marburg
29	Daniel Miller	Mercy Corps
30	Thomas Mueller	Senckenberg Frankfurt
31	G. Munkhbolor	Independent Consultant
32	Sh. Myagmardorj	Bayankhangai <i>sum</i> government, Tuv <i>aimag</i>
33	D. Nandintsetseg	Senckenberg Frankfurt
34	N.Nyamdorj	Herder representative from Altanbulag <i>sum</i> , Tuv <i>aimag</i>
35	Ts. Odontuya	Hustai National Park
36	P.Ongonsar	Asian Development Bank (ADB)
37	M.Sergelen	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
38	Anika Tarne	ISOE – Institute for Social-Ecological Research
39	Karsten Wesche	Senckenberg Goerlitz
40	D. Usukhjargal	Hustai National Park

Programme schedule

Programme schedule	
08:30	Arrival/welcome coffee
09:00	Welcome and introduction of participants
09:30	INPUT SESSION: Aim of the overall research project (presentation and discussion)
10:00	INTERACTIVE SESSION 1: Societal transformation – identification of main societal processes (working groups and presentation in the plenary)
10:30	Coffee break
11:00	INTERACTIVE SESSION 2: Main societal processes – drivers and potential solution pathways (break-out groups per identified societal process; presentation in the plenary)
12:30	REFLECTION SESSION: Feedback from participants Feedback on the overall workshop – Prioritisation of identified processes/problems – Interest in project results and outcomes
12:45	Next steps
13:00	End of the workshop
13:00	Joint lunch

Pictures







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Icons from Noun Project (Figure 3): “attract” (magnet): Dev Patel, “book”: Ben Davis, “chain”: kareemovic2000, “crops” (vendor): Luis Prado, “ger”: Laurens, “meat”: Gerardo Martín Martínez, “sheep”: Sascha Elmers, “solution”: Arthur Shlain, “truck”: Royyan Razka, “wool”: Dao Ge

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