

Visualizing transformation: climate change and social change through the eyes of Mongolian pastoralists

Nomadic pastoralist socio-ecological systems (SES) are currently experiencing rapid and challenging climate and socio-economic changes. We investigate their present strategies and options for adapting to these changes by comparing current situations with recent (decadal) and more distant past (centuries) adaptations. Visual methods such as photovoice diaries, photo-elicitation, participatory mapping are useful tools for understanding local concerns, social memory, and attitudes toward change.

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Research objectives

- (1) Place past and ongoing pastoralist **SES transformations** in the context of climate change;
- (2) Understand to what extent **contemporary institutions** governing indigenous land use **facilitate or hinder long term adaptation** and resilience;

Methods

- 1) **Photovoice diaries**: a type of participatory photography that gives local people opportunity to express own concerns on adaptations to climate change.
- 2) **Photo-elicitation**: the use of photos in interviews to derive meaning and interpret events, social memory, attitudes towards environmental and social change.
- 3) **Mapping**: a form of participatory illustration of landscapes, resources, and their use and dynamics thereof.

Background- Mongolia case study

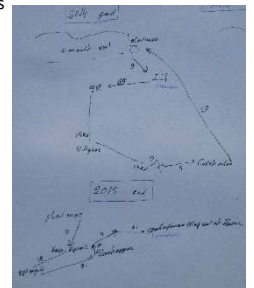
We investigate events that have taken place during different periods during the last millennium (since ca. 900 A.D.), with emphasis on the transitions to the communist period (1921-1990 A.D.) and to the market economy (1990-present). The period is marked by clear climatic and social changes (e.g. transition from warm and moist, to cold and dry period around year 910 AD; land tenure, changes around 1955 and again around 1995).

During the last 2 decades Mongolian pastoralism has been affected by extreme weather events that are more frequent and more intense than at any time in living memory.

Photo-elicitation



Participatory mapping of migrations



Findings

Herders are good at using photos to document their **observations** of environmental change. Environmental problems are always presented in a social and economic context. Herders' own meaning and interpretation of change supports therefore a **socio-ecological system's** approach. Long-term diary approach to photovoice is valuable, allowing flexibility and mastering of 'own story'. This in combination with photo-elicitation and in-depth interviews and landscape walks is more accurate and productive. All methods combined, build a **strong narrative** of impacts of changes in the SESs and possible solutions. The narrative is: the system needs more coordination and cooperation across spatial scales. This includes **coordinated** migrations and **cooperation** between provinces to share emergency fodder and pastures in emergency situations like droughts or bad winters.

Herders' photovoice diary entries- 2017

«We brand horses in late September, before it gets cold». In 2017 done on 5 September since harsh winter was expected early.

Unusual rain patterns, with more intense rains are frequent now: «In July lots of rain made this lake that survived until the cold season.»

Hay is purchased nowadays yearly, used as emergency fodder: «Winter preparation.»

Migrations and hay purchase is financed from the sale of cashmere: «Good price but very variable»

