STRENGTHENING NOMADIC HERDERS’ TRADITIONAL USER GROUPS FOR SUSTAINABLE RANGELAND MANAGEMENT IN MONGOLIA

LESSONS LEARNED: OVERCOMING TRAGEDY OF COMMONS
Mongolian National Federation of PUGs

Swiss Agency for Development and Cooperation SDC

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The role and importance of Mongolian nomadic livestock herding

Natural resource
Animal feed
Soil, vegetation
Wildlife habitat
Nomadic culture and traditions
Art of living

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Current context and main challenges

Number of livestock increases

- Open access rangelands
- Lack of employment opportunity
- No meat export/
  Poor animal health
- Low value of livestock raw materials

Rangeland degradation

- Increase number of livestock
- Lower productivity/yield

The need to increase income

Impact

Vulnerability
High risk
Poverty

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THEORETICAL FRAMEWORK OF ANALYSES (TRAGEDY OF COMMONS)

- Different sizes of independent groups or mainly individuals
- No shared norms and past successful experiences
- Independent individuals
- Heterogeneity of endowments, homogeneity of identities and interests

- Individual farm technology for deplete resources
- Low levels of articulation: and
- Gradual change in articulation with external markets

Group characteristics

External environment

Resource characteristics

Institutional arrangements

- No clear rules
- No sanctions
- No accountability of monitors and other officials to users

- Different sizes of individual farms
- No boundaries
- Individual benefits
THEORETICAL FRAMEWORK OF ANALYSES (COLLECTIVE ACTION AND GOVERNANCE OF COMMONS)

Resource system characteristics
- Small size (RW)
- Well-defined boundaries (RW, EO)
- Low levels of mobility
- Possibilities of storage of benefits from the resource
- Predictability

Institutional arrangements
- Rules are simple and easy to understand (B&P)
- Locally devised access and management rules (RW, EO, B&P)
- Ease in enforcement of rules (RW, EO, B&P)
- Graduated sanctions (RW, EO)
- Availability of low cost adjudication (EO)
- Accountability of monitors and other officials to users (EO, B&P)

External environment
- Technology: a. Low cost exclusion technology (RW); b. Time for adaptation to new technologies related to the commons
- Low levels of articulation: and
- Gradual change in articulation with external markets
- State: a. Central governments should not undermine local authority (RW, EO); b. Supportive external sanctioning institutions (B&P); c. Appropriate levels of external aid to compensate local users for conservation activities (B&P); d. Nested levels of appropriation, provision, enforcement, governance (EO)

Group characteristics
- Small size (RW, B&P)
- Clearly defined boundaries (RW, EO)
- Shared norms (B&P)
- Past successful experiences—social capital (RW, B&P)
- Interdependence among group members (RW, B&P)
- Heterogeneity of endowments, homogeneity of identities and interests (B&P)
- Low levels of poverty
COMPARISON OF THE THEORIES

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What symptoms are prevalent in the nomadic management of Mongolian rangelands?
1. Herders having organized reduce conflict with access to common rangelands?
2. Improved enforcement of grazing management by herders
3. Herders and local authority are enabled to make planned and demand driven investment
## Scope of research area

The research was carried out among 890 PUGs of herders organized in 7 aimags as of September 2015.

<table>
<thead>
<tr>
<th>Aimags</th>
<th>Souns</th>
<th>PUGs</th>
<th>Membership, (herder family)</th>
<th>Number of livestock</th>
<th>Ranglands (ha)</th>
<th>Percentage in national average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Herders organized into PUGs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gobi-Altai</td>
<td>14</td>
<td>108</td>
<td>3791</td>
<td>1,100,000</td>
<td>5,300,000</td>
<td>2.2</td>
</tr>
<tr>
<td>Uvs</td>
<td>18</td>
<td>119</td>
<td>4212</td>
<td>1,300,000</td>
<td>5,700,000</td>
<td>2.8</td>
</tr>
<tr>
<td>Zavkhan</td>
<td>23</td>
<td>218</td>
<td>6474</td>
<td>2,100,000</td>
<td>6,600,000</td>
<td>4.6</td>
</tr>
<tr>
<td>Bayan-olgy</td>
<td>12</td>
<td>194</td>
<td>8390</td>
<td>1,600,000</td>
<td>3,400,000</td>
<td>3.5</td>
</tr>
<tr>
<td>Hovd</td>
<td>16</td>
<td>128</td>
<td>3280</td>
<td>1,000,000</td>
<td>4,900,000</td>
<td>2.2</td>
</tr>
<tr>
<td>Arkhangai</td>
<td>7</td>
<td>100</td>
<td>2853</td>
<td>700,000</td>
<td>1,500,000</td>
<td>1.5</td>
</tr>
<tr>
<td>Bayanhongor</td>
<td>4</td>
<td>24</td>
<td>2214</td>
<td>400,000</td>
<td>1,900,000</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>93</td>
<td>891</td>
<td>31,214</td>
<td>8,200,000</td>
<td>29,300,000</td>
<td>17.6</td>
</tr>
</tbody>
</table>

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“Herders’ Pasture user groups” - Collective organization of herder families and Hot ails with common rangelands and water access.
Main functions of PUGs:

- Members agreed on grazing boundaries of common rangelands
- Develop seasonal movement plan and schedules
- Develop rules to implement the plan
- Enforce and monitor the implementation of plan
Following factors to consider in the definition of grazing boundaries/management in the context of Mongolia:

- Natural resource boundaries (mountains, river, landscapes), rangeland infrastructure (hay lands, crop land, wells, roads etc.,)
- Factors that affect seasonal grazing (temperature, water access, wind directions, rainfall, snow fall etc.,)
- Social boundaries (traditions, customs, relationships among people, clans, network of family and friends, labor needs)
Rangeland use agreement:

- Validate grazing boundaries
- Validate members and livestock number
- Assess the state of current rangeland health/productivity
- Define rangeland carrying capacity
- Define current stocking rate
- Develop rangeland use plan
- Develop and enforce rules to implement the plan

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Rangeland use agreement enforcement mechanisms

1. Rangeland health reference database at the National Agency of Meteorology and Environmental Monitoring

Class V: Extensive soil loss, accelerated erosion rates, or salinization. Usually impractical to recover former community (true desertification).

Class IV: Local loss of key plant species, invasion of noxious plant species, or alteration of hydrology that is unlikely to be recovered for over a decade to many decades without intensive interventions.

Class III: May take 5-10 growing seasons to recover; many ecosystem services lost.

Class II: May be rapidly recovered (3-5 growing seasons).

Class I: Reference and slightly altered conditions. It requires 1-3 growing seasons for recovery from minor changes.

I – 55 %
II – 15 %
III – 23 %
IV – 7 %
V

Recovery class

Projection:
WGS 84
UTM48 North
National Agency of Meteorology and Environmental Monitoring monitors the state of rangeland health.

For instance: Hongor ovoo PUG of Ih Tamir soum of Arkhangai aimag

- Small bunch grass-forb-ARFRI rangeland in Gravelly hills ESG in Forest steppe.
- Recovery class One.
Rangeland use agreement enforcement mechanisms

2. The Agency of Land Affairs Geodesy and Cartography monitors the impact of grazing/use on rangeland health

<table>
<thead>
<tr>
<th>Year</th>
<th>Total cover /%/</th>
<th>Percentage of edible species /%/</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>80.0</td>
<td>12</td>
</tr>
<tr>
<td>2015</td>
<td>56.0</td>
<td>13</td>
</tr>
<tr>
<td>2016</td>
<td>55</td>
<td>9</td>
</tr>
</tbody>
</table>
Rangeland grazing impact monitoring database at the Agency of Land Affairs Geodesy and Cartography

Zavkhan-Bayantes-Bujir-Bujirin uvur

- Foliar cover: 58%
- Grass: 19.5%
- Sage: 31%
- 188 kg/ha

- Foliar cover: 82%
- Grass: 42.5%
- Sage: 23%
- 507 kg/ha

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Findings

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Conflicts among herders with access/use of commons rangelands reduced

- The main reason of conflicts (306) or 40% is due to unclear grazing boundaries
- After grazing boundaries are discussed and agreed conflicts have reduced to 6%.
70% of PUGs pursued rotational grazing and resting schedules as agreed in the plan.
As a result of clear grazing boundaries, carrying capacity and availability of rangelands, both herders and local authority has better planning and investment.

Investment in protection of hay land to increase productivity:

<table>
<thead>
<tr>
<th>Year</th>
<th>Improved hay making/ha/</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>500</td>
</tr>
<tr>
<td>2012</td>
<td>750</td>
</tr>
<tr>
<td>2013</td>
<td>1000</td>
</tr>
<tr>
<td>2014</td>
<td>1500</td>
</tr>
<tr>
<td>2015</td>
<td>5000</td>
</tr>
<tr>
<td>2016</td>
<td>7000</td>
</tr>
</tbody>
</table>

Increased investment in forage planting:

<table>
<thead>
<tr>
<th>Year</th>
<th>Forage planting area /ha/</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>50</td>
</tr>
<tr>
<td>2012</td>
<td>60</td>
</tr>
<tr>
<td>2013</td>
<td>100</td>
</tr>
<tr>
<td>2014</td>
<td>320</td>
</tr>
<tr>
<td>2015</td>
<td>400</td>
</tr>
<tr>
<td>2016</td>
<td>450</td>
</tr>
</tbody>
</table>
Findings

- If there are clear rules and enforced for the use of common rangelands, it is possible to ensure its sustainable use:
  - Conflicts among herders are reduced with clear grazing boundaries and better planning
  - Stable rotational grazing/resting
  - Increased investment on rangeland management both from herders and local government
- We observe that Mongolian nomadic management of common rangelands more in line with “principles of common pool resources” of Eleonor Ostrom
Clear boundaries of common pool resources

Traditional seasonal grazing boundaries of Hot ails and PUGs (winter, summer, autumn, spring)

Seasonal grazing schedules

Access to shared water and minerals

Ensure participation of all relevant stakeholders in the development of rules and enforcement

PUG and Bag meetings

Soum and Aimag WGs (land managers, rangeland experts, herders, environmental inspectors, Soum Governors etc., )

Acceptance or rules by government and other stakeholders

Soum rangeland regulation

Soum annual rangeland management planning, implementation and enforcement

Common pool resource regulation specific per context

PUG internal regulation

PUG rangeland use agreement

Soum rangeland use regulation

Simple and easy to enforce dispute settlement mechanisms

PUG leader

Bag Citizens Hural decision

Responsibility mechanisms is based on primary users and all other relevant stakeholders develop policy and actions in support or with reflections of these mechanisms

Primary users are Hot ails and PUGs of herders organized based on traditional rangeland use customs and practices
Thank you very much for your attention!

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Global Agenda for Sustainable Livestock

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