Gender aspects of Rangeland Management in Mongolia

preliminary results

Tungalag Ulambayar*, Maria Fernandez-Gimenez*, Batbuyan Batjav**, and Batkhishig Baival***

* Dept. of Forest & Rangeland Stewardship, Colorado State University
** Center for Nomadic Pastoralism Studies, Mongolia
*** Nutag Partners, Mongolia
Outline

- Brief about Mongolia
- Rationale
- Methods
  - Research Questions
  - Hypotheses
  - Sites and Sampling
  - Variables and Analysis
- Results
- Discussion
Brief about Mongolia

- Country territory: 19th out of 249
- Population: 2.7 least density
- Lower middle income country
- Famous for:
  - Genghis khan
  - Powerful queens
  - Rich dinosaur fossils
  - Large mineral deposits

- 1924 - women gain right to vote
- 44th among 135 – gender gap
- No.1
  - economic participation and opportunity
  - health and survival
- 127th among 135 in political participation
Rationale: Problem and Research Objective

Government

Donors

Influencing variables?

Collective action?

Social capital?

Information?

Knowledge exchange?

Gender??

Land degradation

Poverty

Actions, processes

traditional

organized

organized

Land degradation

Poverty

Influencing variables?

Collective action?

Social capital?

Information?

Knowledge exchange?

Gender??

Government

Donors
Conceptual Framework

**Community-based natural resource management**

- Social capital
- Information access, knowledge exchange
- Collaboration (Collective action)

**Gender in natural resource management**

- Gender equality
- Diversity: knowledge, needs
- Better decision making

**Improved condition of resources & livelihoods**

**Gender in Mongolia**

- Positive historic records
- Contemporary issues
- Gender in rangeland
Methods: Research Questions and Hypotheses

Research questions

• Do female-led and male-led herder households differ in socio-economic outcomes?

• Do the social outcomes of female-led and male-led nomadic herding groups differ?

Hypotheses

• Female-led households will have significant social and economic disadvantages compared to their male-led counterparts, and these are reflected in greater vulnerability at a household level.

• Female-led community groups will have greater adaptive capacity due to stronger leadership and trust building among members.
Methods: Research Sites and Sampling

Legend
- Household Surveys (n=21)
- Org Profile Surveys (n=36)
- MOR2 Study Sites
- Aimag Boundary

Unprojected MOR2 Spatial Data
Methods: Research Sites and Sampling

<table>
<thead>
<tr>
<th>Unit of Analysis</th>
<th>Organization type</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>CBRM</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Non-CBRM</td>
<td></td>
</tr>
<tr>
<td>• Male-led</td>
<td>29</td>
<td>18</td>
</tr>
<tr>
<td>• Female-led</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>• Male-led</td>
<td>62</td>
<td>57</td>
</tr>
<tr>
<td>• Female-led</td>
<td>16</td>
<td>5</td>
</tr>
</tbody>
</table>


Methods: Variables and Analysis

HOUSEHOLDS

Dependent Variables

Vulnerability
- Percent loss of livestock in dzud (% of herd lost between 2009 and 2010)
- Nutrition status (per capita annual expenditure for food)

Livelihood
- Livestock number (livestock per capita in sheep unit)
- Household assets (sum of owned household assets 15)

Knowledge exchange (sum of responses to 16 questions)
Collective action (index created from 3 variables) Cronbach alpha = .67

Independent Variables

Household head sex
Group leader sex
Methods: Variables and Analysis

ORGANIZATIONS

**Dependent Variables**
- Trust (4-scale variable);
- Leader’s legitimacy (sum of 2 responses)
- Leadership quality (mean of 10 variables with 4 scales)
- Grazing regulation (sum of 4 variables)

**Independent Variables**
- Household head sex
- Group leader sex

**Test Method**
Analysis of Variance

alpha = .10 due to small sample
Results: Demography of Households

Household size

- Male-headed
- Female-headed

- 1 person: 4.3% (male), 21.6% (female)
- 2-3 persons: 31.9% (male), 32.4% (female)
- 4-7 persons: 63.8% (male), 45.9% (female)
Results: Demography of Households

Household head age

- Male-headed
- Female-headed

Household education level (%)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Elementary</th>
<th>Secondary</th>
<th>Professional</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>29.8</td>
<td>63.9</td>
<td>2.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Female</td>
<td>35.1</td>
<td>45.9</td>
<td>18.9</td>
<td>0</td>
</tr>
</tbody>
</table>
## Results: Comparison of Household Vulnerability

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Independent variable</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Head sex</td>
<td>N=84</td>
</tr>
<tr>
<td>Vulnerability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Dzud loss* (%)</td>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37</td>
</tr>
<tr>
<td>• Nutritional status</td>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37</td>
</tr>
<tr>
<td>Livelihoods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Household assets</td>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37</td>
</tr>
<tr>
<td>• Livestock per capita</td>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37</td>
</tr>
<tr>
<td>Knowledge exchange</td>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37</td>
</tr>
<tr>
<td>Collective action</td>
<td>Male</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37</td>
</tr>
</tbody>
</table>

* Interaction effect of Gender and Group type was significant at \( p<.05 \) for dzud loss.
## Results: Comparison of Organizations by Leader sex

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Independent variable</th>
<th>Group leader</th>
<th>N=140</th>
<th>Mean*</th>
<th>SD</th>
<th>F</th>
<th>p - value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader’s legitimacy</td>
<td>Male-led</td>
<td>115</td>
<td>6.18</td>
<td>.13</td>
<td>1.805</td>
<td>.181</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female-led</td>
<td>20</td>
<td>6.70</td>
<td>.37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership quality</td>
<td>Male-led</td>
<td>119</td>
<td>.98</td>
<td>.04</td>
<td>2.148</td>
<td>.145</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female-led</td>
<td>21</td>
<td>1.17</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust among members</td>
<td>Male-led</td>
<td>119</td>
<td>2.78</td>
<td>.06</td>
<td>3.590</td>
<td>.060</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female-led</td>
<td>21</td>
<td>3.13</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of grazing rules</td>
<td>Male-led</td>
<td>119</td>
<td>1.59</td>
<td>.14</td>
<td>.140</td>
<td>.709</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female-led</td>
<td>21</td>
<td>1.74</td>
<td>.40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* unweighted means applied due to unequal sample sizes
Discussion

Hypothesis 1 - supported:

• female-led households - significantly fewer household assets
• less access to information and knowledge exchange
• less participation in collective activities leading to greater vulnerability

However,

• women - significantly more expenses on basic food items
• may imply better nutritional status.
• may also mean greater debt if there is an income deficit
• spending priority for benefit of children
Discussion

Hypothesis 2 – not supported:

• *female-led and male-led organizations – equal level of leadership*
• *similar governance process over grazing management*

However,

• *female-led organization - higher level of trust among members*
Implications

Household level
• **social policy** - to reducing vulnerability of female-led households and enabling greater access to information and participation in knowledge sharing and collective activities

Organization level
• **rural women leaders** - the same level of leadership qualities and reputation as their male counterparts
• **more gender research** - targeted to outcomes of pastoral institutions
• **survey instrument** needs to be designed with an explicit **gender focus**
Thank you

Sincere thanks to my advisor prof. Maria Fernandez-Gimenez for her guidance, and NSF for their financial support, Arren, Niah and Hailey for their comments on my presentation