Overview of Agenda

- April 4 (UB): Purpose, Introductions & Overview, Qualitative Methods & Instruments, Introduction to Quantitative Methods
- April 5 (UB): Review Quantitative Instruments, Site Summary Procedures, Revisions and Preparations for Field Testing
- April 6-8 (Bayan-Unjil and Adatsag Soums): Field Testing and Training
- April 9-12: De-briefing, revision of instruments, retesting and final revision of instruments

Detailed Agenda—Day 1

9:00 Welcome, Introductions & Ice-breaker, Overview of MOR2 Project and Social Component (Maria)  
10:30 Break  
10:45 Introduction to Qualitative Research Methods (Batkhishig)  
    - Entering the Site, Gathering Existing Data (Batbuyan)  
    - Participatory Wealth Ranking & Mapping (Batbuyan)  
    - Focus Groups (Batkhishig)  
    - Semi-structured Interviews (Maria)  
12:30 Lunch  
1:30 Review of Qualitative Instruments (Team)  
3:30 Break  
3:45 Introduction to Quantitative Methods  
    - Survey design and sampling (Batkhishig)  
    - Survey Implementation & Minimizing Error (Batbuyan, Batkhishig & Maria)  
    - Data Entry and Analysis (Maria)  
5:00 Homework and Wrap-up  
5:30 Adjourn

Detailed Agenda—Day 2

9:00 Review and Questions from Day 1  
9:15 Review Household Questionnaire (Team)  
    - Review CBREM/Neighborhood Leader Questionnaire (Team)  
    - Review Soum Focus Group Participant Questionnaire  
    - Review Soum Development Questionnaire  
12:00 Participatory mapping (Batbuyan)  
12:15 LUNCH  
1:15 Survey Implementation and Minimizing Error  
1:30 Putting it all together  
    - Data curation, fieldnotes, entry and analysis (Maria)  
    - CBREM Org./Neighborhood Profile Form  
    - Soum Profile Form  
2:30 Instrument revisions, planning and preparation for field test  
5:00 Adjourn

Draft Agenda—Day 3-5 Field testing

- April 6  
  - Soum-level data collection  
  - 7:00 Depart for Bayan-Unjil Soum  
  - Soum official interviews  
  - Soum focus group & questionnaires  
  - Soum statistics  
  - Group list  
  - Select group for study  
  - Map  
  - Soum Profile Form

- April 7  
  - CBREM Organization data collection  
    - Member Focus Group  
    - Leader Interview(s)  
    - Non-member interviews  
    - Member household questionnaire  
    - Identify ecological sampling sites  
    - CBREM Profile Form

- April 8  
  - Traditional Neighborhood data collection  
    - Adatsag Soum  
    - Identify & map neighborhood groups  
    - Select group for study  
    - Focus Group  
    - Leader interview(s)  
    - Member household questionnaire  
    - Identify ecological sampling sites  
    - Neighborhood Profile Form

Purpose: Training AND Field-testing

- Provide all team members with understanding of the overall project and the objectives of the social component within the project.
- Orient and train all team members in the methods that will be used (new for some, refresher for others)
- Review, as a team, all the instruments (questionnaires, focus group guides) that will be used, and revise if needed
- Field test all instruments, revise and re-test
- Field train new researchers
Introductions

**PROJECT OVERVIEW**

MOR2 Project Overview

MOR2 is a **collaborative** effort of Colorado State University and Mongolian research and educational institutions and NGOs.

**PROJECT PARTNERS**

- Mongolian Institute for Meteorology and Hydrology
- Institute of Geo-Ecology
- Research Institute of Animal Husbandry
- Center for Ecosystem Studies (National Agricultural University)
- Center for Nomadic Pastoralism Studies
- Mongolian Society for Range Management
- Wildlife Conservation Society
- Texas A&M University
- University of Arizona
- Colorado State University

**PROJECT COLLABORATORS**

- SDC Green Gold Ecosystem Management Program
- UNDP Sustainable Land Management Program
- WCS “Scapes” Project
- The World Bank, Sustainable Livelihoods Program

**Project Objectives**

1. Assess the vulnerability of Mongolian pastoral social-ecological systems to climate change
2. Evaluate the effects of community-based rangeland management (CBRM) on the resilience of Mongolian pastoral systems.
3. Strengthen linkages between natural resource science and policy-making in Mongolia.
4. Build the capacity of participating Mongolian and US researchers and students to analyze the dynamics of complex coupled natural-human systems.
Social-ecological System

Ecosystem Services
(e.g. forage production, water, sacred places, flood control, climate regulation)

Effects of Decisions
(e.g. stocking rates, tree harvest, mining, water use, cultivation, development)

External Drivers & Shocks

Human

Environment

(Social-ecological System
(From Verstraete et al. 2009, Stafford-Smith et al. 2007)

Conceptual Model

Expected Outcomes

- Increase scientific understanding of community-based institutions and coupled systems' resilience to climate change
- Develop methods for integrated data collection and analysis
- Impact policy through participatory modeling and scenario planning
- Recommendations to donors, NGOs and government on community-based rangeland management in Mongolia
- Train Mongolian & US researchers and graduate students
- Train secondary school teachers

Research Questions & Hypotheses

Research Question 2:
Does community-based rangeland management (CBRM) increase coupled systems' resilience to climate change?

CBRM Resilience Hypothesis:
- CBRM increases the adaptive capacity of coupled systems by strengthening self-regulating feedbacks between social and ecological systems.

CBRM Performance Hypothesis:
- Performance and outcomes of CBRM will vary with key institutional design elements, including territory & group size, monitoring & enforcement mechanisms, and others.

Study Design & Sampling

- Nation-wide comparative study
  - 3 ecological zones (mountain/forest steppe, steppe, desert steppe)
  - In each zone, paired soum with and without formal CBRM
- Multiple, nested scales
  - 40 soum (20 with CBRM and 20 without formal CBRM)
  - ~200 CBRM groups/traditional herder community (5 per soum)
  - 1000 herder households (5 per group)
  - 600 ecological plots (3 per group)
- Over time
  - Remote sensing
  - Historic and statistical data
Proposed Sampling Design

- **Stratification**
  - by ecological zone
  - by presence/absence of organized CBRM
  - by CBRM project sponsor (e.g. GG, UNDP, WCS, etc.)

- **Purposive selection of replicated paired soum within each ecological zone to control for ecological variability**

- **Within selected soum, randomly select 5 CBRM groups or traditional herder neighborhoods**

- **Within groups/neighborhoods select**
  - 1 winter pasture area for ecological sampling (3 plots/pasture)
  - 5 herder households for socio-economic sampling

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**Units of Analysis & Sampling Units**

<table>
<thead>
<tr>
<th>Units of Analysis or Sampling Units</th>
<th>People</th>
<th>Animals</th>
<th>Pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soum</td>
<td>Soum</td>
<td>Soum herd</td>
<td>Soum territory</td>
</tr>
<tr>
<td>CBRM Organization or Neighborhood Group</td>
<td>CBRM Organization or Traditional Neighborhood Group</td>
<td>Aggregate herd</td>
<td>Winter pasture area</td>
</tr>
<tr>
<td>Household</td>
<td>Household</td>
<td>Household herd</td>
<td>Winter pasture area</td>
</tr>
<tr>
<td>Sampling Unit</td>
<td>Person (questionnaire respondent)</td>
<td>Animal (sampled)</td>
<td>Ecological plot (sampled)</td>
</tr>
</tbody>
</table>
The Art of the Interview

- Open-ended questions
- Same questions for each respondent
- Questions can be rephrased (do not have to be asked in the exact same way for all respondents—DIFFERENT from a questionnaire)
- Flexibility to follow-up responses, or follow emerging lines of questioning (not on list)

 Semi-structured Interview: Advantages

- Allows respondent to talk at length and naturally about what they know or think
- Allows for flexibility in following up, clarification
- High validity (confidence that you are measuring what you want to measure)
- Best way to gather specific examples, detailed accounts of events, explanations of rules, etc. (when long-term participant observation is not possible)
Semi-structured Interview:
Disadvantages
- May not be highly reliable (e.g. may not be repeatable by another researcher)
- Time-consuming
- Requires a skilled researcher
- May be difficult and time-consuming to code and analyze

Semi-structured Interview: Tips and Strategies
- Establish rapport
  - Put the respondent at ease, no right or wrong answers
  - Let them know you are interested, their views and knowledge is important
- Explain the purpose of the project and the interview and their rights as interview subjects
- Active listening
  - Repeat back, summarize what they have told you
  - Probe, ask for elaboration and examples
  - Signal a change in topics by summarizing the topic you are closing
  - Use silence strategically.
  - Be persistent but sensitive in eliciting answers to complex or controversial topics

Semi-structured Interview: Tips and Strategies
- Demonstrate empathy
  - Show empathy for the respondent's experiences or perspective (but without introducing bias)
- Maintain neutrality
  - Do not ask leading questions or suggest what the answer might be
  - Don't suggest that their views or actions are right or wrong, but confirm that you understand what they have told you (their perspective or reasoning)
- Maintain your professional role as a researcher
- Be sure to thank respondent and affirm the value of their participation

Semi-structured Interview: Note-taking and Recording
- The best interview is worthless if it is not recorded!
- ALWAYS take written notes even when audio-recording. You NEVER know when the device will fail, batteries will run out etc.
- Best Practice: All semi-structured interviews should be conducted by a 2-person team, one interviewer and one note-taker.
- Label every interview with subject's complete name, position, date, place and time (and contact information if possible), and interviewers' names
- Review notes after interview, SAME DAY, to correct any illegible places, cross-check uncertain notes with the other interviewer, etc.
- Keep separate list of all individuals interviewed at each site and all vital information for those people
- Interview notes to be typed up for coding/summary upon return to UB. Recording can be used to cross-check notes.

DATA ENTRY & ANALYSIS

DATA ENTRY—For Quantitative Analysis
- Data Reduction: Summarize & Code Qualitative Data
- Enter Coded Data into Database
- Quality Control and Data Checking
- IN THE FIELD:
  - Complete each CBRM/Neighborhood Profile Form and Soum Profile Form
  - Most critical are the sections that require the team to make a subjective rating of the group based on qualitative data, and question 4.1
- IN UB:
  - Enter existing soum data, Profile forms, and household surveys into database (DATABASE IS STILL IN DEVELOPMENT)
Data Entry—For Qualitative Analysis

- **IN THE FIELD:**
  - Write a short narrative summary (1 typewritten page) for each group and one for each soum overall.

- **IN UB OR FIELD:**
  - Transcribe notes—Type handwritten interview or focus group notes into computer word processing file.
  - Save photographs and other materials in digital form.
  - Scan and archive hard copies of project documents, etc.
  - Download and archive all the digital audio files

Taking Care of Data

- All data (notes, survey questionnaires, soum and CB RM group profile forms) should be checked for completeness before leaving the site.
- All data from each site (group/neighborhood) should be labeled clearly with name of research subject/event (focus group), group, bag, soum and aimag, and researcher’s name.
- Paper files should be carefully organized and stored in a separate folder for each group.
- Once data are entered into the computer, files must be clearly labeled in a consistent manner for each site, and all electronic data must be backed up on multiple media (hard drive, flash drive, CD/DVD).

Example of Database

- Show excel spreadsheet
- Show SPSS database

Quantitative Data Analysis

- Descriptive statistics
  - Means and frequencies of survey items for each group and soum
- Hypothesis testing using inferential statistics

Example: Survey of 70 herding households in 3 aimag in fall 2007

<table>
<thead>
<tr>
<th>Management Practice</th>
<th>Members (n=33)</th>
<th>Non-members (n=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # moves over past 18 months</td>
<td>6.5 (± 0.5)</td>
<td>5.2 (± 0.5)</td>
</tr>
<tr>
<td>Total distance moved (km) over past 18 months</td>
<td>133 (± 20)</td>
<td>73 (± 21)</td>
</tr>
<tr>
<td># different camps over past 18 months</td>
<td>4.5 (± 0.4)</td>
<td>3.5 (± 0.4)</td>
</tr>
<tr>
<td>Reserve winter pasture</td>
<td>83%</td>
<td>61%</td>
</tr>
<tr>
<td>Oter moves</td>
<td>63%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Example: Survey of 70 herding households in 3 aimag

- Members of herding groups agreed more strongly than non-members that:
  - People in my community are honest
  - People in my community get along well
  - People in my community help each other out
  - People in my community have similar values to mine
  - I really part of my community
Qualitative Data Analysis

- Code interview and focus group notes or transcripts based on themes related to objectives and hypotheses
- Identify and code emergent themes
- Assemble data to test existing theories or build new theories
- Use coded passages (quotations) as evidence

Quantitative and Qualitative

- 2 types of data and analyses are complimentary
- In this project, we will do quantitative analyses first
- Then follow-up with more detailed qualitative case studies of a sub-set of soums or groups to help understand the broad patterns and anomalies in the quantitative analysis