INDEX BASED INSURANCE AND DISASTER RISK MANAGEMENT IN MONGOLIA
Brief context of Mongolia livestock sector

- Mongolia is a country of 2.5 m people and 33 million livestock.
- Mongolia is one of the least densely populated countries in the world – ranking 235th out of 238 countries/territories.
- 40 percent of the workforce is engaged in livestock sector, mostly herders.
- Livestock represent 63% of the value of rural household assets.
- Livestock is predominantly raised in an extensive, pasture-fed, system, heavily dependent on climatic and natural conditions.
- The climate is harsh (dry, winter temperatures go below minus 40°C, snowstorms, high winds etc); and the environment is fragile (shallow soils, grasslands).
Nature of risk

- Natural factors: dzud.
- Human factors: Extensive grazing system with open access to resources increases risk by contributing to overgrazing and degradation of pasture.
Mean temperature has increased by 1.9 Degrees of Celsius during 1940-2004 period.

- Winter ↑3.6 °C
- Spring & Fall ↑1.4-1.9 °C
- Summer ↑0.6 °C

Source: SDC Green Gold Project, Mongolia 2010
Precipitation trends

- South and Central Mean Precipitation $\downarrow 8.7\text{-}12.5\%$
- East and West Mean Precipitation $\uparrow 3.5\text{-}9.3\%$
- Fall and Winter Mean Precipitation $\uparrow 5.2\text{-}10.7\%$
- Spring and Summer Mean Precipitation $\downarrow 9.1\text{-}3.0\%$

Source: SDC Green Gold Project, Mongolia 2010
Impact of climate on livestock mortality

• Dzud has a major impact on livestock mortality, at an aggregate level.
• Dzud severity varies greatly from year to year, but also from location to location.
• The spikes on this graph show the major national level results.
• In terms of total number of livestock mortality, 2010 was worst in history
2010 – worst dzud in history

**DZUD FACTS 2010**
1. Covered 80% of the territory
2. 97,500 herder households (57.3% of the total) were affected
3. Total of livestock loss reached around 9.7 million head, (22 %)
4. Aggregate value around 477 million USD.
5. 8,711 herder households lost all of their livestock.
6. 32,756 herder households lost at least 50% of their livestock.
Conceptual approach – risk layering

- There are many ways to conceptualize risk in agriculture.
- In Mongolia, we use a concept of risk layering as a framework to understand the nature of risk and appropriate responses.
- Based on understanding distinction between risk retention and mitigation; risk transfer; and social protection;
- Designing appropriate instruments with clearly defined roles for stakeholders in the system.
Pattern of losses
Understanding risk - simplified

Frequency

Losses
Risk layering

Layer 1: High frequency, low losses: these are near annual events which cause relatively low levels of livestock losses.

Layer 2: Low frequency; medium losses: less common events (e.g., one in ten years); causing significant losses of livestock.

Layer 3: Very low frequency, very high losses: these are rare, catastrophic events (such as 2010 dzud, 1944).

Diagram:
- Frequency axis
- Losses axis
- Layer 1: 6% of losses
- Layer 2: 30% of losses
- Layer 3: 6% of losses
# Risk layers and responses

<table>
<thead>
<tr>
<th>Layer</th>
<th>Response</th>
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<tbody>
<tr>
<td>Layer 3: Very low frequency; catastrophic losses</td>
<td><strong>Risk Retention &amp; Reduction, Risk Transfer PLUS Risk Coping:</strong> Actions that will help cope with the losses caused by a risk event (e.g. government assistance to farmers, debt re-structuring, etc.)</td>
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<tr>
<td>Layer 2: Low frequency; high losses</td>
<td><strong>Risk Retention &amp; Reduction PLUS Risk Transfer</strong> : Actions that will transfer the risk to a willing third party, at a cost. Financial transfer mechanisms will trigger compensation or reduce the losses in the case of a risk generated loss (e.g., insurance, re-insurance, financial hedging tools, etc.)</td>
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<tr>
<td>Layer 1: High frequency, low losses</td>
<td><strong>Risk Retention &amp; Reduction:</strong> Actions taken to eliminate or reduce events from occurring, or reduce the severity of losses taken at the local level.</td>
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Objective: to increase the resilience of herder communities to low level events through:

1. Providing pasture quality forecasts (early warning system);
2. Providing tools for herders and communities to plan and manage risk and allocate resources accordingly (participatory NRM);
3. To finance local public and club goods to improve preparedness for winter (hay and fodder production; fodder storage; etc)
4. To demonstrate new technologies (eg in fodder production) to improve resilience;
5. Distance learning for herders on pasture management and herd management to improve winter preparations;
6. Testing new institutional arrangements for pastoral risk management (eg herder group management of common access resources)
Mid level: severe impact

- This layer of risk (with high losses) is not easily absorbed by herders (except for wealthier herders)
- Additional tools required for risk transfer and coping, such as insurance
Objective is to test the viability of commercial, affordable index-based livestock insurance.

Scope: Pilot commenced in 2005, now scaling up

Approach: An index approach is used: the insurance is based on a soum (district) - level index of livestock mortality.

Clear definition of trigger point (currently 6%) and exhaustion point (currently 30%) to define risk layer

Institutional Innovation: The project builds a partnership between participating insurance companies and the Government.
Progress

- Has completed five full cycles. Scale up has begun and the insurance is being offered in 15 (out of 21) provinces in 2011. Full scale up in 2012.
- Five local insurance firms are currently participating.
- Participation rates from herders now over 10,000 herder households (out of approx 120,000 nationwide) – up to 25-29 percent in pilot provinces.
- Total premium for 2011-12 is US$600,000 (average premium is around US$50).
- In 2010, a total of 4706 herders received a total of US$1.42 m in indemnity payments (average of US$302).
- International reinsurance: secured for the first time in 2010 (for 2011 cycle).
Number of policy holders

![Graph showing the number of policy holders from 2006 to 2011. The y-axis represents the number of policy holders, ranging from 0 to 12,000. The x-axis represents the years 2006 to 2011. The number of policy holders increased from 2422 in 2006 to 10,910 in 2011.]
Challenges for establishing a sustainable agricultural insurance system

1. Developing a robust data system
2. Securing ex-ante financing
3. Creating institutional structure for administration and management
4. Establishing efficient delivery systems and indemnity payment systems
5. Creating capacity – government, insurance firms, regulator
6. Establishing an appropriate legal and regulatory framework.
1. Developing a robust data system

- Insurance is driven by data on losses, both historical data to enable the calculation of risk (and premiums) and also actual losses and/or indices.
- All stakeholders – policy holders, insurance firms, reinsurers, etc, must trust the data.

In Mongolia, the National Statistics Office provides the data on livestock mortality on which the insurance policies are written. The project provides support for data collection and technical assistance.
2. Securing ex-ante financing

- Insurance requires that the financial structure is in place to ensure that policy holders are paid when there are losses.
- There are several ways to secure this: building reserves, accessing reinsurance, and/or government contingent funds.

Under IBLIP, all three are being pursued:

- **IDA supports a government contingent debt facility;**
- **There is inter-year reserving (though currently exhausted);**
- **Project is currently in discussion with global reinsurers… this is critical to achieving the ultimate aim of the project to transfer the risk out of the country.**
3. Creating institutional structure for administration and management

- In agricultural insurance, the nature of risk makes public sector involvement almost inevitable (certainly to establish new schemes), so critical issue is how to determine the roles of public and private sector actors, and how this should evolve over time;

- Ultimately, the ideal is to move to an administrative structure that is self-financing;

In Mongolia, the PIU administers the insurance… this is increasingly creating tensions with the insurance firms.
4. Establishing efficient delivery systems and indemnity payment systems

- How is the insurance going to be sold?
- How are marketing costs kept to a minimum (especially in context of a widely disbursed population)?
- How do you ensure policy holders with eligible claims are paid accurately and on time?

In Mongolia, the agent model is currently used, though has failed to create competition between insurance firms. This is likely too expensive to be sustainable – marketing costs are too high.

Alternatives include bundling insurance with credit and selling through banks; or moving to a controlled monopoly; using ICT (eg sales over mobile phones)
5. Creating capacity

- Don’t under-estimate the capacity building requirements for introducing market-based agriculture insurance – for data collection and analysis; for insurance firms; in government; in regulators.

6. Establishing an appropriate legal and regulatory framework.

- All of the above policy decisions need to be properly enshrined in legislation and regulation.
TFESSD Study introduction

- Initiated in 2010 following the major dzud event.
- Objective: review and suggest options to enhance the fiscal and disaster management system to prepare for, cope with and recover from dzud.
  - arrangements for more structured financing,
  - coordination and targeting of post-disaster responses to catastrophic livestock losses
- 3 components:
  i. Structured Government financing for dzud
  ii. Herder livelihood resilience to climatic risk
  iii. Government Systems for dzud preparation, support and recovery
Structuring Government financing for dzud

Objectives:

- review adequacy of the current system, including contingent financing, using the 2010 dzud experience;
- explore the scope for enhancing the system to a more structured approach…
- … including establishing a National Disaster Indemnity Program
Key findings: Herders used a range of coping and adaptive strategies in advance of and in response to the dzud, which fall into 5 major categories: storage, mobility, diversity, reciprocity and flexibility.

- **Storage** in the forms of animal fat/weight gain, hay, hand-made and purchased fodder, and grazing reserves.
- **Mobility** of different types is an important strategy before, during and after dzud.
- **Diversity** is expressed in a variety of adaptive strategies include hedging risk by keeping a multispecies herd, generating income from multiple sources.
- **Reciprocity and exchange** are central to Mongolian herding culture and underlie key strategies
- **Flexibility** is a general strategy that refers to the invention of new practices and the ability to change (splitting households or khot ail), in movement patterns, etc
Constraints to adaptation

- Herders lack of knowledge about and experience with dzud preparation and coping strategies (i.e., proper feeding and grazing strategies during dzud),
- Limited experience with cooperation and collective action among communities,
- Insufficient access to technical and financial resources,
- Lack of clear laws and regulations,
- Institutional barriers, and
- Lack of coordination between all levels of social organization and among donors and local government and donor.
Feed and fodder systems

the management of pasture combined with the preparation of adequate fodder and winter shelters is essential to ensure that livestock can endure dzud winter conditions.

- **Preparation:** Feeding animals to reduce risk and ensuring there are adequate feed supplies to maintain animals during an emergency situation;

- **Response:** Emergency feeding to prevent death (loss of assets supporting livelihoods), to secure household food supplies and to ensure a return to productivity in the recovery period.

- **Recovery:** Feeding to re-establish assets and productivity.
Strengthen animal nutrition system

- provide an enabling policy framework;
- develop PPPs for the livestock sector;
- decentralize responsibility, authority and resources;
- develop integrated regional feed resource management system;
- provide clear and reliable information for decision making;
- focus NEMA on major emergencies and strengthen planning and monitoring capacity;
- improve efficiency and transparency in reserve management;
- remove market distortions and promote a viable private feed and fodder industry;
- provide herders the right financial incentives and disincentives;
- build herder capacity; and
- provide for support for exit strategies from herding.
The dzud management strategy and related plan of action should include the following:

- Measures to strengthen herder risk reduction capacity and capabilities.
- An incentives structure to encourage individual herders to reduce risk and take appropriate preparedness measures.
- Support for the development of market mechanisms to manage risk.
- Transparent criteria for the declaration of a dzud.
- Comprehensive dzud monitoring, impact and needs assessment procedures.
- Adequate mechanisms for the timely provision of targeted assistance to dzud-affected households.
- A clear schedule of types and levels of support available to affected households and communities and transparent related trigger mechanisms.
- A comprehensive system for tracking GoM and development partner dzud response resources.
- Mechanisms for communicating the strategy to herders.
Targeting of dzud support could be improved by creating a social protection instrument providing cash transfers to severely affected households, perhaps linked to a development partner-supported contingency fund.

**Potential design features**

- The instrument could utilise the mechanism under the new Social Welfare Law to provide one off payments in the event of disasters or accidents
- Support could be provided to all dzud-affected households who already qualify for the means-tested poverty benefit (implying up to around 50% coverage of herder households)
- Payments would be triggered by pre-determined criteria (e.g., climatic and pasture conditions, livestock losses)
- A second tier of support to all affected household could be triggered once soum-wide mortalities reach a higher level (e.g., via the revised DRP mechanism)
- The poverty benefit would also provide a means of longer-term support for more severely affected households for whom recovery is slow
Thank you