



RISK MANAGEMENT: THE CASE OF THE LIVESTOCK SECTOR IN MONGOLIA

Andrew Goodland

Outline



1. Brief context – nature of risk in Mongolia
2. Conceptual framework for understanding and addressing risk in the agricultural sector
3. Interventions supported by WB to implement risk framework

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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

Nature of risk

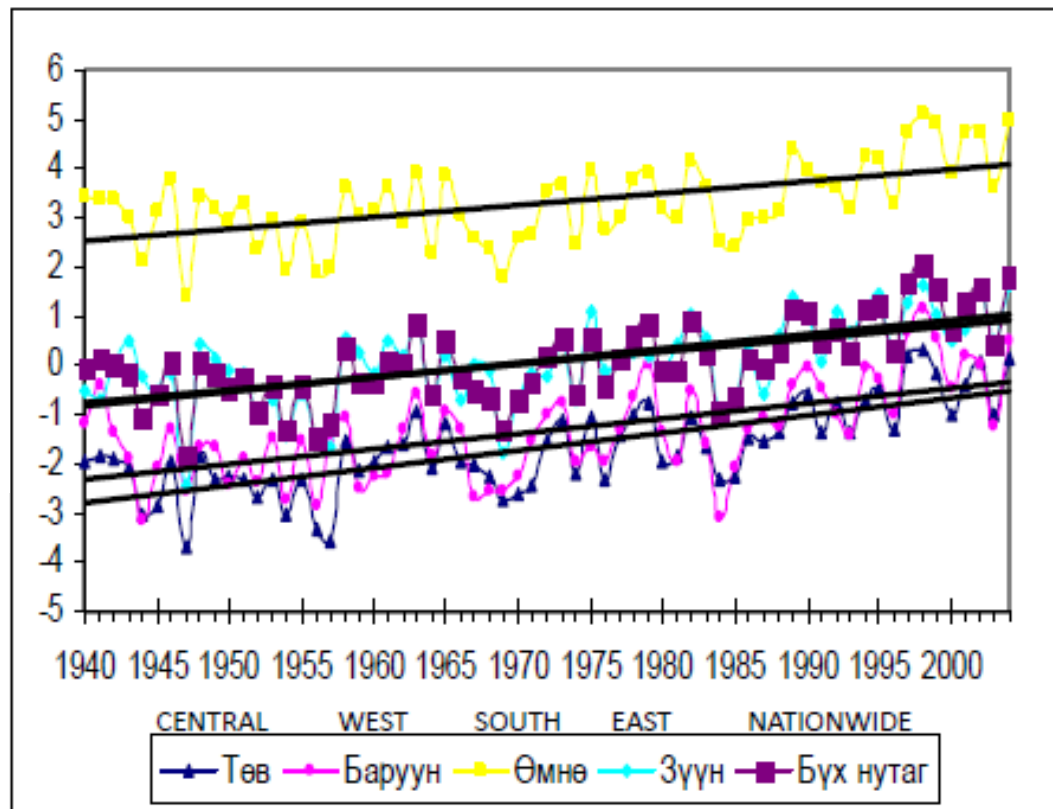
- Natural factors: dzud.
- Human factors: Extensive grazing system with open access to resources increases risk by contributing to overgrazing and degradation of pasture.



Temperature trends

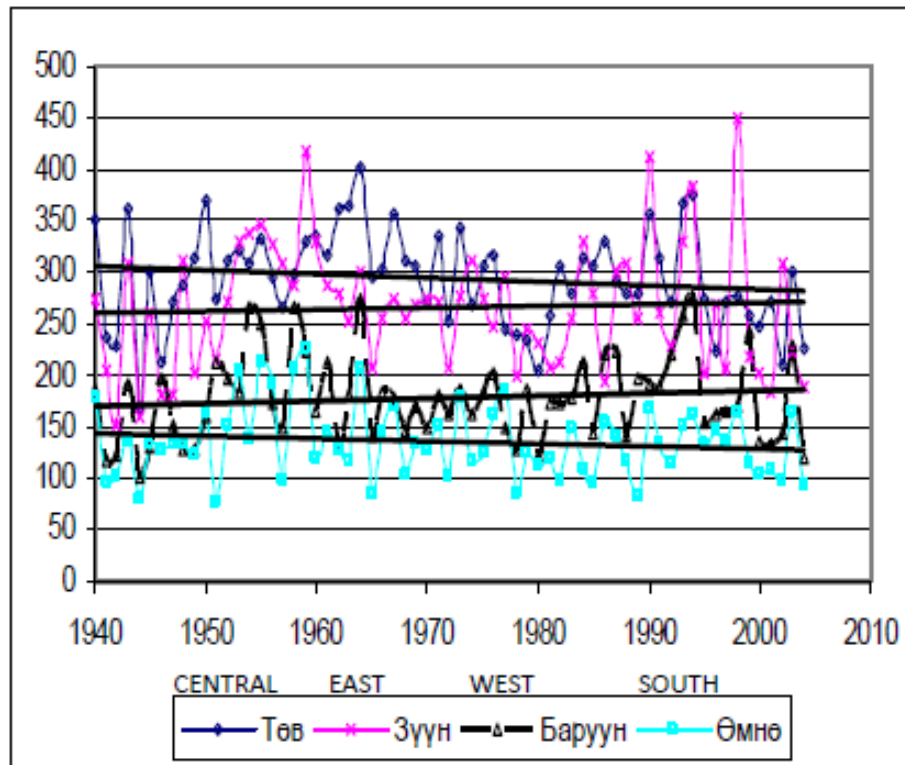
Mean temperature has increased by 1.9 Degrees of Celsius during 1940-2004 period.

- Winter $\uparrow 3.6^{\circ}\text{C}$
- Spring & Fall $\uparrow 1.4\text{-}1.9^{\circ}\text{C}$
- Summer $\uparrow 0.6^{\circ}\text{C}$



Source: SDC Green Gold Project, Mongolia 2010

Precipitation trends

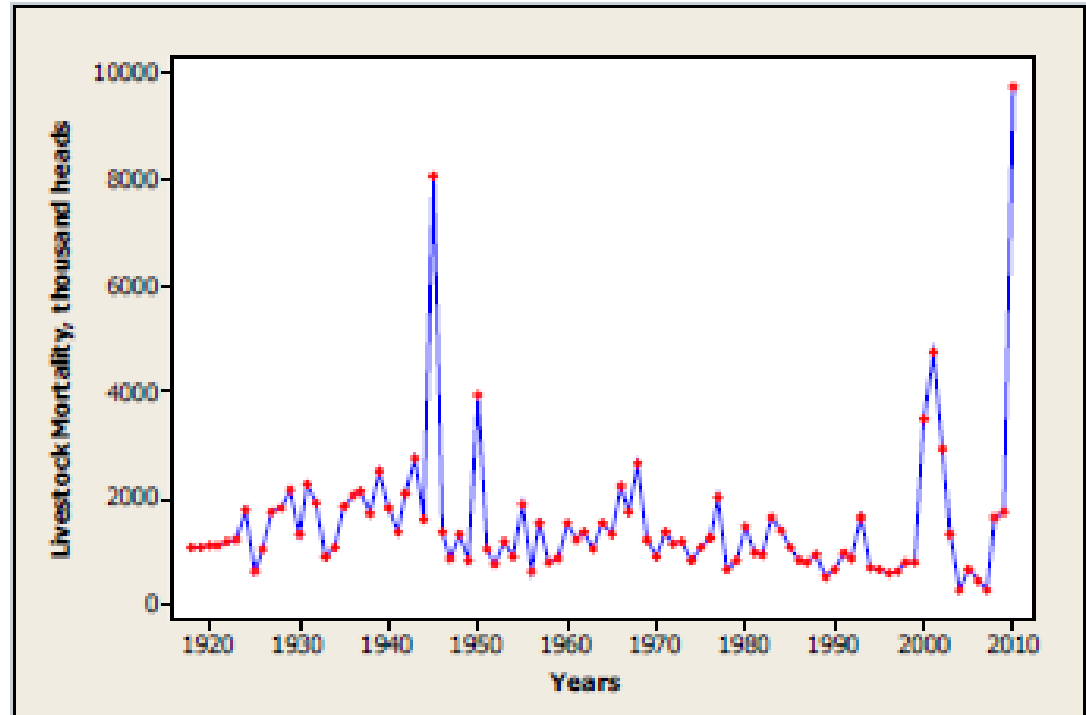


Source: SDC Green Gold Project, Mongolia 2010

- South and Central Mean Precipitation ↓8.7-12.5%
- East and West Mean Precipitation ↑3.5-9.3%
- Fall and Winter Mean Precipitation ↑5.2-10.7%
- Spring and Summer Mean Precipitation ↓9.1-3.0%

Impact of climate on livestock mortality

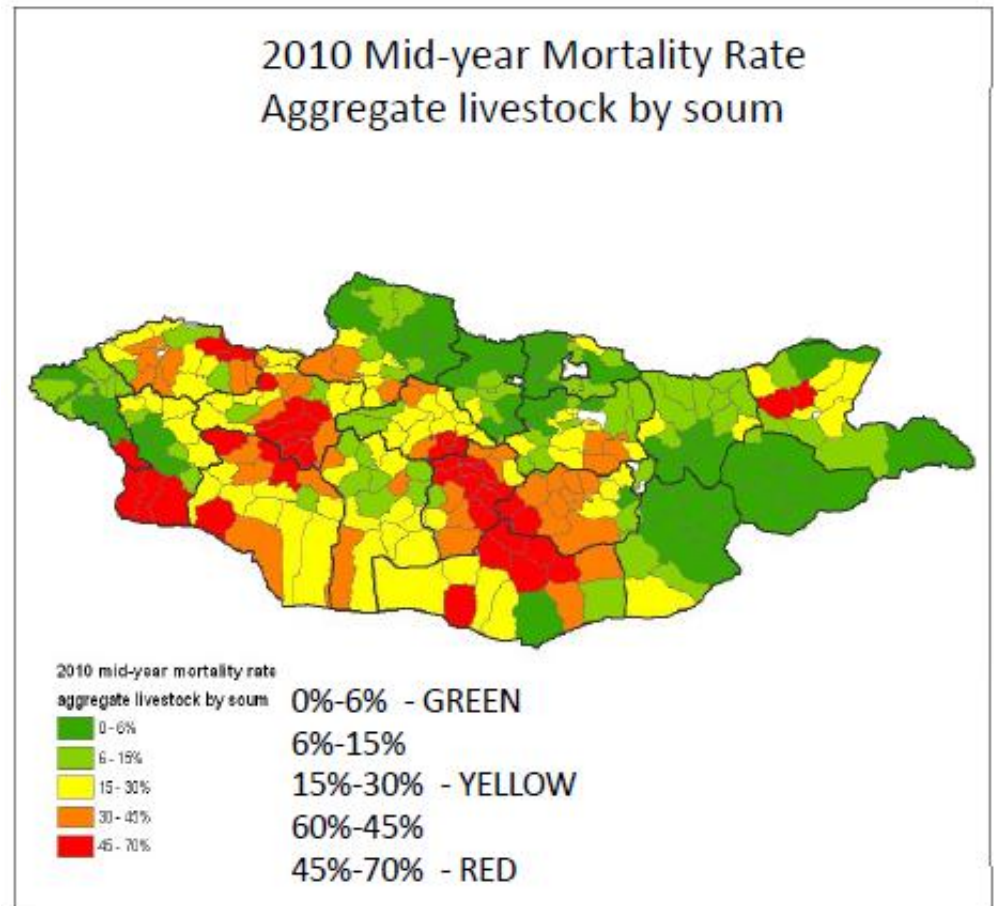
- Dzud has a major impact on livestock mortality, at an aggregate level.
- Dzud severity varies greatly from year to year, but also from location to location.
- The spikes on this graph show the major national level results.
- In terms of total number of livestock mortality, 2010 was



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.



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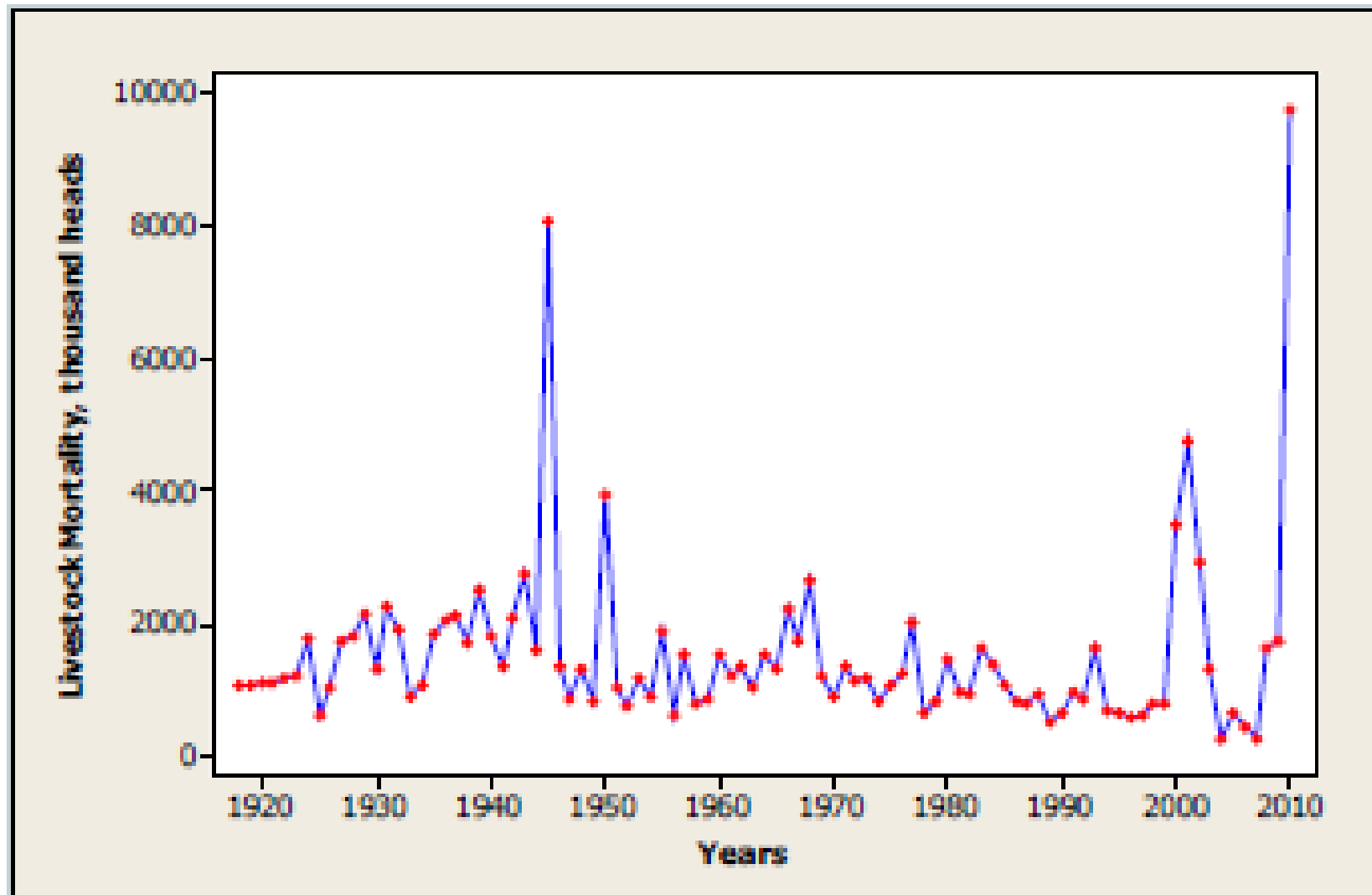


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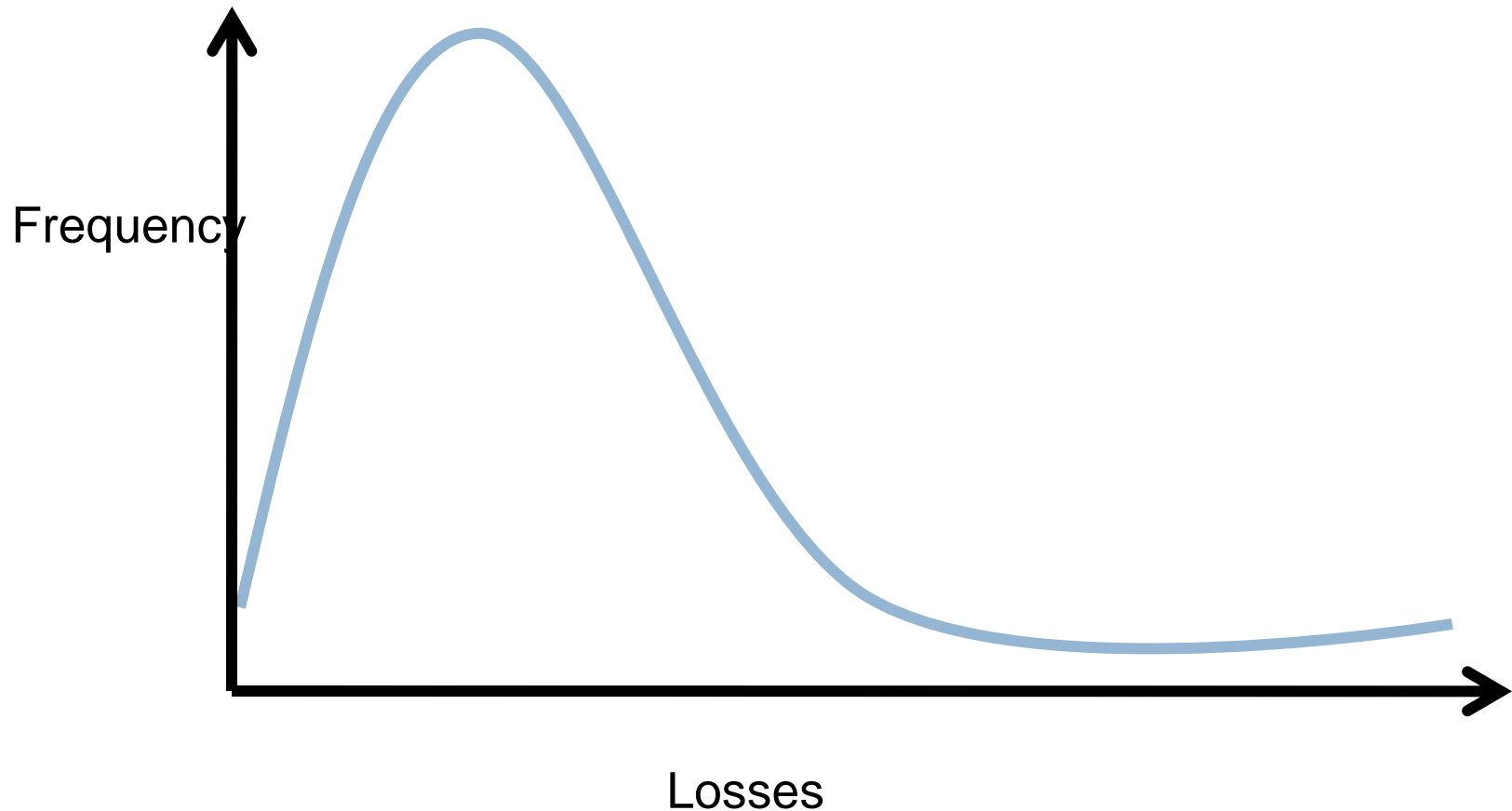
Conceptual approach – risk layering

- 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

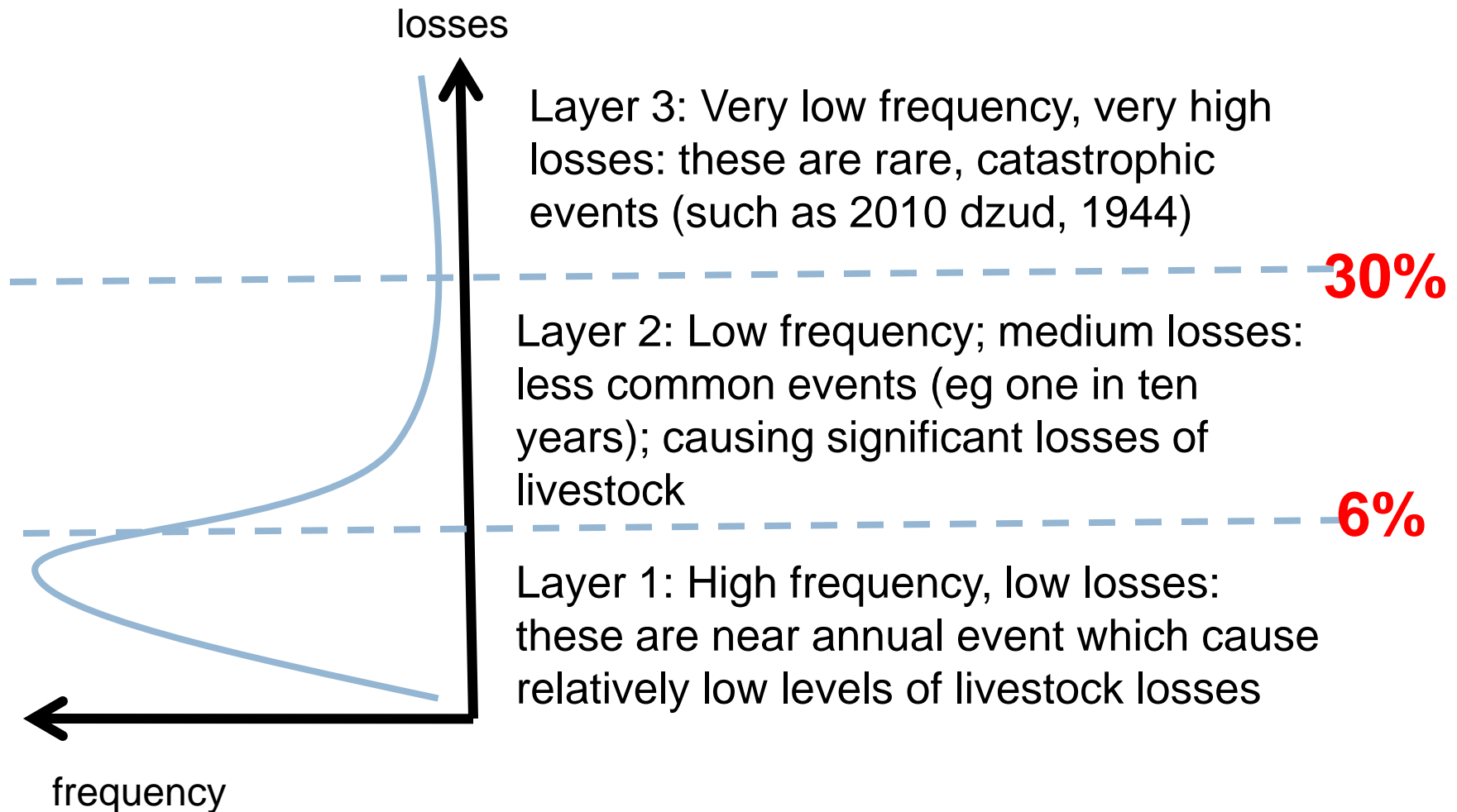
Pattern of losses



Understanding risk - simplified



Risk layering



Risk layers and responses

Layer	Response
Layer 3: Very low frequency; catastrophic losses	Risk Retention & Reduction, Risk Transfer PLUS Risk Coping: Actions that will help cope with the losses caused by a risk event (e.g. government assistance to farmers, debt re-structuring, etc.)
Layer 2: Low frequency; high losses	Risk Retention & Reduction PLUS Risk Transfer : 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.)
Layer 1: High frequency, low losses	Risk Retention & Reduction: Actions taken to eliminate or reduce events from occurring, or reduce the severity of losses taken at the local level.

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High frequency; low impact: Sustainable Livelihoods Program – Pastoral Risk Management Component

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

Index based Livestock Insurance Project

- **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.

Index-based insurance challenges

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.

Progress

- Has completed four 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.
- Four local insurance firms are currently participating
- Participation rates from herders now up to 6947 herder households (10.5 percent)
- Total premium for 2010-11 is US\$295,000 (average premium is US\$42)
- 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).

Catastrophic risk

- This is “non-insurable” as losses are too high.
- IBLIP exhaustion point is 30%, so we define catastrophic losses as 30% and higher within a district.
- Catastrophes require highest level of involvement from the public sector.
- Again, a combination of approaches are required:
 - ▣ Government Catastrophe Coverage
 - ▣ Targeted transfers

Government Catastrophe Coverage

- GCC is an add-on to the IBLIP commercial product.
- All policy holders qualify; this is not reflected in their premium rate, ie this is a subsidy.
- Policy holders are protected up to 100% of district losses. Financed from the IBLIP contingent debt facility.

Analysis of the 2010 dzud

- Current situation: MOF maintains some contingency budget for distribution following dzud; Donors provide disaster relief following dzud
- Issues (from 2010 dzud):
 - ▣ **Committed funding fell far short of estimated needs**
 - ▣ **Available resources were often poorly targeted relative to need, both between aimags and individual recipient households**
 - ▣ **The assistance provided was insufficiently timely**
 - ▣ **The response efforts are unlikely to have prevented an increase in the incidence of poverty**

Recommendations: Dzud Management Strategy

The GoM should develop a *comprehensive dzud management strategy*, linked to adequate financing arrangements and disbursement mechanisms. This strategy should be based on:

- ▣ A clear statement of the GoM's dzud-related responsibilities
- ▣ The GoM's obligations to reduce poverty and support the establishment of a sustainable livestock sector
- ▣ Direct, transparent linkages to the National Mongolian Livestock Program.

Recommendations: Dzud Management Strategy

Lessons learned from the recent dzud experience should be embodied in this strategy. In support of improved financing arrangements, it should include:

- ▣ Transparent mechanisms for the declaration of a dzud
- ▣ Transparent trigger mechanisms for the release of individual forms of assistance and clear schedules of available support (e.g., as in India and Vietnam)
- ▣ More systematic disaster impact and needs assessment procedures
- ▣ The system for tracking GoM and development partner dzud response efforts should be strengthened

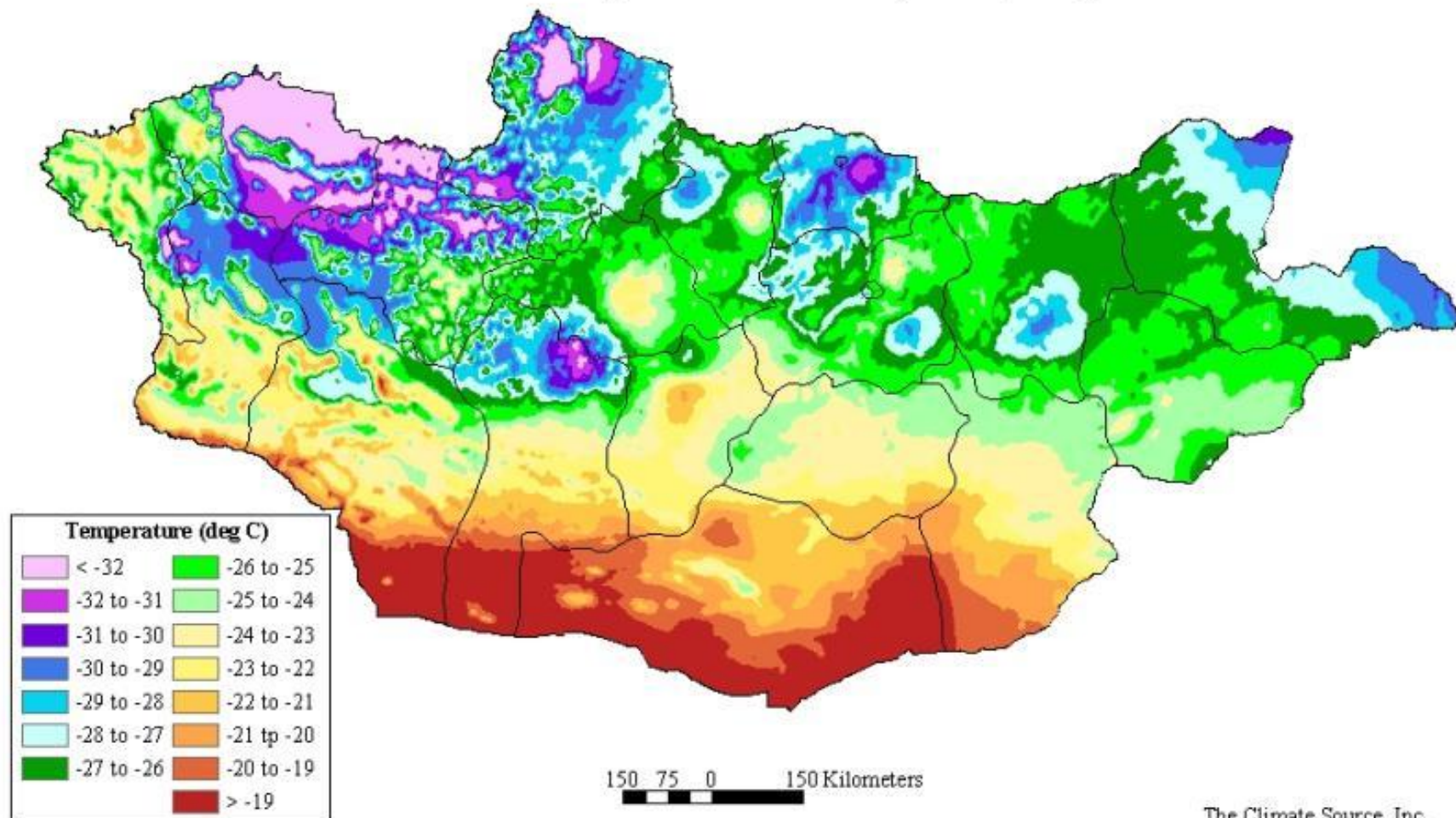
Final thoughts & messages

- Conceptualizing risk in this way can be applied for other types of agricultural risk
- This can help to identify an appropriate mix of mechanisms (It is not all about insurance!!)
- It can help to define and allocate responsibilities (mainly between producers, government (local and national) and private sector (eg insurance, micro-finance, etc))

Thank
you



PRISM 1961 - 1990 January Mean Minimum Temperature, Mongolia



Map Created: November 2002

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