

Which livestock insurance is right for Mongolia?

It is Monday morning. Ganbold Ochir is looking at the fluffy snowflakes falling on the ground softly like white cotton balls. While he enjoys watching the snow falls through the window of a modern office protected by walls and a heating system, Ganbold knows that it is not simply a pretty scene for herders in rural areas. Herders in Mongolia have suffered tremendous losses in recent *dzud* (winter disaster caused by severe snow storms and heavy snow falls) with mortality rates of over half of the animals in a number of *soums* (a local administrative unit below province centers). Thousands of herder families have lost their livelihood since they were dependent on livestock as their primary source of income. They have not been able to access the financial resources they need to recover their livelihood. Only 5% of herder households are able to borrow from the banking system. Livestock, which is the primary source of income for most herders, is considered to be highly seasonal and subject to uncontrollable risks such as the weather, which affects not only one borrower, but can systematically affect all herders in the region. Financial service providers have been hesitant to provide loans to herders based on this perceived high risk involved in livestock. The resulting limited access to financial services has led to increasing poverty and social problems in rural areas.

Ganbold has been hired as a technical advisor to make recommendations on improving the livestock insurance system in Mongolia. Together with Willem Tomar, an international expatriate, his task is to provide recommendations on integrated strategies to assist herders in managing the covariant risk in Mongolian pastoral livestock production. Insurance is one of the strategies being considered. In particular, they are examining three alternatives to insure against livestock losses in Mongolia:¹ 1) traditional livestock insurance that pays individual herders based on their specific losses; 2) weather index insurance that would pay when weather events that are likely to create serious losses occur; and 3) livestock mortality index insurance that would pay when livestock mortality rates exceed certain thresholds in a *soum*².

In examining the pros and cons of the above three alternatives, Willem and Ganbold both recognize the importance of the country context, past history, and current situation of livestock insurance in the country.

Compulsory Insurance Scheme in *Negdel* Time

Compulsory livestock insurance for *negdel* (state-owned cooperative under communist regime) animals³ started from a government resolution in 1964, and the rules established by this resolution were valid until the 1990s. State insurance was under the authority of the Ministry of Finance and the finance departments of the *aymag* governments were responsible for

¹ Skees and Enh-amgalan, 2002. Note that there are a number of other types of innovative insurance products that may be considered for livestock. For example, there is revenue insurance, whole farm insurance, price insurance, area-based insurance, etc. Due to the peculiar conditions in Mongolia, these two types of index insurance are considered as alternatives to the traditional insurance. For more info on these and other types insurance products, see Kang, 2005.

² *The mortality index insurance* would pay anytime the mortality rate (adult livestock deaths divided by the total census number of livestock in the area at the beginning of the year) exceeds a well-specified threshold. The payment would be a function of the mortality rate times the amount of protection (or liability) purchased by the herder.

³ *Negdel* refers to a state-owned cooperative. In addition to *negdel*-owned animals, *negdel* members were allowed to have private animals but this was strictly limited to up to 75 animals in the Gobi region and 50 animals in other regions per family. The portion of private animals accounted for around 25% of the total number of animals.

administering this system, and insurance was re-insured by a foreign company. All traditional five species of animals plus donkeys were insured at 1% premium rate for camels and 1.7% for other species, based on the average balance sheet value of animals. Indemnities were paid at 80% of the value of lost animals. Animals were insured against contagious diseases, droughts and other extreme weather events including fires, floods and lightning.⁴

The procedure for claiming indemnities in the event of animal losses was quite bureaucratic. Each lost animal had to be strictly certified by a veterinarian and approved by higher-level bodies. Failure by the State Insurance Department to fully pay indemnities to *negdel*'s claims was quite common, with a variety of excuses such as lack of documentation and late claims.

Background

A World Bank study reports: "Livestock herds are a vital component of the Mongolian economy making up about one third of the GDP. Further, livestock herders and their families make up a large percentage of the poor in Mongolia. Eighty percent of the herders have less than 200 animals. Herd sizes need to be greater than 200 to sustain a family at a reasonable level of income. Added to the low levels of income for a vast number of the Mongolian herder families are the persistent risks that plague livestock. Consequences of consecutive *dzud*, the winter disaster in Mongolia, have been devastating and caused high rates of livestock deaths during the winters of 1999-2000 (average rate of 10%) and 2000-2001 (average rate of 7.5%).⁵ The main reasons for such high rate of loss included: 1) weather; and 2) the macro environment. Weather events included: 1) droughts prior to winter; 2) heavy snow; 3) cold temperature; 4) freezing and thawing of snow causing ice; and 5) combination of these events. Macro environment explanations included: 1) the inexperienced herders that have returned to herding after reform; 2) breakdown in the infrastructure of wells for water along the traditional routes of *otor* (nomadic pasturing); 3) the lack of forage reserves that were supplied by the former regime; and 4) a general lack of capital to purchase needed feed during the *dzud*."⁶

Overgrazing has also contributed. Since most of former *negdel* employees became herders because they had no other alternatives, the number of herders' households, which was approximately 70,000 in 1990, increased to 200,000 in the end of the 1990s. All these herders tried to increase their livestock to stabilize their livelihood. As a result, according to official statistics, the number of livestock rapidly increased from 2.5 million in 1990 to 3.3 million in 1999, causing overgrazing.

Current Supply of Livestock Insurance

While there are 16 insurance companies in Mongolia, the insurance industry is still in its infancy. Total premiums for the industry represented about 0.5% of GDP in 2001, with Mongol

⁴ In 1975 government resolution No. 15 determined not to use the term 'dzud', explaining that it cherishes the mentality of bad herders to blame nature for animal losses.

⁵ Skees and Enh-amgalan, 2002

⁶ Ibid.

Daatgal accounting for the largest share -- 80%.⁷ There is no reinsurance for the program, and the management of Mongol Daatgal has freely admitted serious concerns about the viability of the program, expressing little desire to get more participation for fear of major losses. The company did not sell livestock insurance in 2002 because of persistent *dzud* and droughts over the last few years, and they still do not promote the products for livestock. The staff mentioned that because livestock herding is high risk, premium rates are established at above 6%. Since premium rates are dependent on coverage rates, the rate can be reduced if many herders are involved. But the problem is that herders want to insure only those animals that pose some risk. Re-insurance involving international companies is important, but foreign re-insurance providers have been reluctant to get involved, citing the high risk of animals in Mongolia. Although the company plans to introduce insurance for reproductive cows, their business strategy for livestock insurance will be made only after privatization is completed and the law enforcing compulsory insurance is enacted.

Other than Mongol Daatgal, only two other companies (Nomin Insurance and Bat Daatgal) are interested in livestock insurance, and they are waiting for the formulation of livestock insurance laws by the government, expecting that insurance will become compulsory. All insurance companies engaged in or interested in livestock insurance seem to be in agreement that in order to provide insurance, government support and the legal environment that makes insurance compulsory for all livestock are indispensable. However, the draft law requiring compulsory livestock insurance was rejected by a parliament committee last year, and the Ministry of Finance and Economy now plans to submit a revised draft law based on index insurance.⁸

Weather index insurance

Weather index insurance pays when a particular weather condition that is likely to cause serious losses occurs, such as rainfall below certain thresholds during critical growing periods. In the case of Mongolia, drought is a significant problem. Thus, there is some potential to investigate offering insurance against a shortage of rainfalls during the critical months of June and July. Weather index insurance is being considered for livestock because of Mongolia's unique situation, in which livestock have predominant importance of in the economy and are subject to uncontrollable systematic risks due to weather conditions.

The effects of weather vary in different geographical locations and do not seem to explain livestock loss completely. Ganbold recalled that in his Master's thesis in 1997, he had created statistical models to explain growth rate of livestock between 1969 and 1990 for 36 *soums* spread across Mongolia. He attempted to explain variation in the growth rate (the birth rate minus the mortality rate) using weather variables. He found that each *soum* had unique weather events that contributed to the growth rates.

Furthermore, he added, the loss of livestock is caused by a variety of weather conditions, such as lack of precipitation which leaves livestock without water supply, heavy snowfalls that make it impossible for livestock to reach the grass below, droughts leading livestock to further

⁷ Draft Final Report "Transforming the Financial System Case Study" for Mongolia Country Assistance Program Evaluation of ADB, Gravitass, 2002

⁸ Ministries in charge are still discussing whether or not the revised law requires compulsory insurance.

weakness, forming of ice cover over the pasture that makes grazing impossible, and extreme cold, which combined with insufficient bodyweight causes death by starvation and freezing. So, the loss of livestock was the result of a series of several poor weather events over the period of two years, rather than one single weather event. Willem sighed and added: “That is right. And you know we have just been informed by the Statistics Office that there is no historical data on these various weather events in Mongolia.”

Livestock mortality index insurance

“Well, let’s see what our third option, the index insurance has to offer in this situation” said Ganbold, trying to take on a more positive turn. Willem was glad to share his experience, having studied index insurance when India experimented with it for crops,. He moved around his chair to make himself comfortable and faced Ganbold: “To tell you the truth, this is relatively new concept. So far, it has been tried only on crops in India and Kenya. But that is pretty much it. It has not been applied to livestock” he looked at Ganbold trying to observe his reaction. “I see. It looks like we will be a sort of a Guinea pig. Is there anything appealing? How does it work?” asked Ganbold.

This insurance will pay when the mortality rate exceeds a certain level regardless of the individual’s actual loss. The mortality rate is calculated as follows: adult livestock deaths divided by the total census number of livestock in the area at the beginning of the year. The payment would be a function of the mortality rate times the amount of protection purchased by the herder.⁹ The herders who increase their efforts during a major event (*dzud*) would likely be compensated for this effort even though they do not lose livestock, since this insurance would pay all herders in the same *soum* at the same rate. Bankers who were presented with the idea of insurance based on mortality losses within the *soum* expressed a keen interest in this alternative insurance.

“How about the quality and availability of data?” asked Ganbold. “It sounds like the quality of data is critical since the setting of the thresholds will be dependent on data.”

Willem responded: “Well, that is a bit of a concern right now. Data for a limited number of *soums* in nearly every *aymag* were available from 1969-2000. They were used to perform an assessment of the risk associated with offering mortality index insurance across Mongolia. The analysis demonstrates that there are great differences in the relative risk of livestock losses across Mongolia. On a standardized basis, the risk index that was created for all species suggest that 6 of 27 *aymags* have risk that are 3 times or more higher than the risk in the lowest set of *aymags*. This magnitude speaks to the need to set different premium rates across Mongolia for any insurance program. But in terms of the quality and availability of data, I am afraid I do not have much good news, as you know it very well yourself.”

Ganbold nodded his head and told Willem: “The biggest problem is with the livestock census. It is usually done once a year at the end of December by local governors at the *bag* level (the administrative unit below *soum* level). This timing is not good because the herders do not get their compensation until the end of December, when they lost their animals before April. They have to wait for about 8 months. Furthermore, due to both intentional and unintentional reasons;

⁹ Skees and Enh-amgalan, 2002

the numbers of livestock are never reported accurately. The *bag* governors do not have much incentive to go out and count the livestock of each household. Households are usually spread all over this vast country and keep moving around in every four seasons. To pay less tax, herders want to give the smallest number possible. Do you know of any strategy that can address these issues? Is there any sampling method that can be used to improve the quality of data?"

"I am afraid, I cannot provide answers to these questions right now. But we will check into these issues as we design the recommendation" said Willem.

According to a study by the World Bank¹⁰, index type insurance is more suitable for the livestock industry because it can reduce the cost to investigate each widely scattered household in Mongolia. Also, it would not induce moral hazard in claiming and would not reduce herders' incentive for good management because they will receive the same rate of payment, even if their loss is not significant. In the field study conducted by the Japanese Bank for International Cooperation (JBIC) in 2003, 45.6% of the respondents (herders and micro-entrepreneurs in livestock and related industry in five *aymags*) indicated preference for the traditional insurance type, while 54.4% preferred the index insurance.¹¹ However, their understanding of the pros and cons of the two types of insurance schemes seems have been limited because the index insurance is still new concept and the traditional type was never fully explained to them during the centrally planned economy.

Weighing the three options

At the end of the rather pessimistic conversation, Willem and Ganbold agreed that despite the fundamental problems discussed above, the need for livestock insurance in Mongolia is very real. At the same time, they both recognized that no one approach offers the perfect answer. So, they have developed the following performance criteria for assessing the three alternatives and identifying the best of the three:¹²

1. The insurance should not reward poor managers.
2. The insurance must be affordable by a large number of herders and others at risk when major livestock losses occur.
3. The insurance must be sustainable and profitable for emerging private insurance companies.
4. The first products should focus on the most significant covariant risk.
5. A proper role for government should be to foster development of risk sharing markets without imposing large social cost.
6. The insurance should work in harmony with other initiatives, including the vast array of development aid and emergency assistance that is provided.

Willem and Ganbold are eager to delve into the task of examining each option through the lens of above criteria. But they are also aware that it is not only important to identify an option, but also to design a plan to adapt it in the case of Mongolia and implement it, including strategies to

¹⁰Ibid.

¹¹ Awano, Hishigsuren, Azegami and Okamoto, 2003

¹²Skees and Enh-amgalan, 2002

address the issues that each of the option presents.

Questions for participants:

Imagine you are hired as technical advisors in the place of Ganbold and Willem.

1. Which alternative do you think is more appropriate for Mongolia? Why? Please pay attention to the process, not just on the potential approach. Below is a table that is intended to help you in rating the above three types of insurance based on key performance criteria:

| <i>Rate as “low-med-high”</i> | <i>Traditional insurance</i> | <i>Weather index insurance</i> | <i>Livestock mortality rate index insurance</i> |
|---|------------------------------|--------------------------------|---|
| The insurance should not reward poor managers | | | |
| The insurance must be affordable by a large number of herders and others at risk when major livestock losses occur | | | |
| The insurance must be sustainable and profitable for emerging private insurance companies | | | |
| The first products should focus on the most significant covariant risk | | | |
| A proper role for government should be to foster development of risk sharing markets without imposing large social cost | | | |
| The insurance should work in harmony with other initiatives, including the vast array of emergency assistance that is provided. | | | |

2. What are the possible challenges do you think may arise in the case of the option that you recommend? For example, the issues of inaccurate and incomplete data gathering system if you were to recommend the index insurance.

3. What would you recommend to respond to those challenges (what needs to be done)?

4. What are the possible risks for each of the following stakeholders?
- a. For herders
 - b. For insurance companies
 - c. For government

References

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- Skees, J., & Enh-amgalan, A. (2002). *Examining the feasibility of livestock insurance in Mongolia*. Washington, DC: The World Bank.**

Further readings:

The use of price and weather risk management instruments, by Erin Bryla

Agricultural insurance in Latin America: where are we? By Mark Wenner and Diego Arias

Guarantees for rural financing: a guide to USAID's New Mechanism, by John Wasielewski and Stavely Lord