Catastrophe insurance programs in agriculture and livestock - Perspectives for Private Public Partnerships and the role of reinsurers

Dr. Rolando Hernández

Workshop on Funding Mechanisms for Outbreak Containment and Compensation in Asia
Jakarta, February 2009
MAIN MESSAGES

→ Agriculture and Livestock insurance penetration in disaster prone developing countries is very low and tends to lag behind other lines of insurance.

→ There are strong forces at work that impair the development of effective livestock insurance (particularly in catastrophic events) solutions in these countries.

→ Donor countries should facilitate the development of catastrophes insurance programmes in agriculture and livestock by providing capital support and working together with private insurance markets and governments.

→ Alternative risk transfer arrangements (pools) created as Public-Private-Partnerships and supplemented by ex-ante risk management and structured relief programs may be a way to go.
THREE SORTS OF INSURANCE IN AGRICULTURE

→ Insurance for the commercial large-scale farmers
  • Agribusiness may be more motivated to purchase insurance when it may lead to better terms or credit or other business advantages
  • Able to pay insurance premium

→ Insurance for farm households (small-scale farmers)
  • Low risk awareness and undeveloped risk management
  • Low incomes
  • Needs financial support from the Government in order to be economic viable

→ Insurance for whole or regional governments
  • Protects the un-insured property and costs bound to be taken by the Government
  • Strong tradition of governments providing considerable "reconstruction" subsidies to victims of disasters
LIMITATIONS OF TRADITIONAL CATASTROPHE INSURANCE

Nat cats are low frequency/high severity events

Reasons for un-availability of nat. cat. covers: average frequency and severity of loss hardly known

- Individual farmers
- Insurers
- Reinsurers
- International donors

Capital market

Amount loss per event

minor
medium
large
huge

one every year event
probability of occurrence
one in 100 years event
ROLE DISTRIBUTION IN A PUBLIC - PRIVATE PARTNERSHIP

→ Insurance companies' role
  • Assume liability
  • Product development and innovation
  • Active underwriting, monitoring, loss assessment and claims handling
  • Cooperation with government, associations and organizations

→ Hannover Re's role
  • Knowledge transfer from other markets
  • Active support in development and establishment
  • Tailor made reinsurance concepts/capacities
  • Efficient handling of agricultural and livestock insurance cover thanks to special agricultural insurance know-how
  • Develop risk transfer products and structures that address the needs most effectively
ROLE DISTRIBUTION IN A PUBLIC - PRIVATE PARTNERSHIP (CONT'D)
The role of the government and international donor organizations

→ Main role: regulation and legal framework
→ The role of government can be as:
  • Insurer
  • Reinsurer
  • Reinsurance buyer
  • Risk aggregator
  • Provider of financial support

→ Market inefficiencies may require state intervention
→ In some cases the government can supplement the private sector and expand limits of insurability.
→ Ex-post government interventions can lead to unexpected effects and trigger further interventions instead of addressing the root causes
**HOW DO POOLS OPERATE?**

1. **Risk 1**: one fish farm
2. **Risk 2**: one cattle farm
3. **Risk 3**: one poultry farm

**Premium from each company**

**The pool pays**

**The POOL is created**

- **Insurance A**
- **Insurance B**
- **Insurance C**
- **Reinsurance A**

**One loss occurs**
ANOTHER EXAMPLE OF HOW POOLS OPERATE

Risk 1 = one cattle farm
Risk 2 = one fish farm
Risk 3 = one poultry farm

One loss occurs in the fish farm

Is a big loss?

Small loss

Insurance A
Insurance B
Insurance C

Reinsurance premium

Hannover re

large loss

One loss occurs in the fish farm
**PROCESS OF INSURANCE IN LIVESTOCK INSURANCE**

- Pooling of different risks
- Definition of Total Sum Insured
- Applicable insurance rate
- Livestock defined as TSI is insured
- An insured peril affects the TSI
- Loss is covered by insurer
- Really big loss
- Loss is covered by reinsurer
- Big or small loss?
- Covered by insured
→ Livestock insurance
  • Livestock insurance covers the death of the animal due to accidents and/or diseases
  • Livestock insurance against loss of carabao, cattle, horse, swine, goat, sheep, poultry and game due to accidental death or diseases

→ Rice
  • The insurance covers the cost of production inputs per farm plan and budget, plus an additional amount of cover of up to 20% hereof to cover portion of the value of the expected yield
  • The premium rate is variable per region, per season and per risk classification
  • Two types of insurance cover:
    - Multi risk cover (comprehensive)
    - Natural disaster cover (limited)

→ Corn
  • Same case as in Rice
MEXICO - AGROASEMEX
High-mortality insurance in livestock using satellite imagery

- Insured: Ministry of Agriculture
- Risk covered: Climate related risks that have a direct impact on a reduction of grassland vegetation biomass, which results in additional feed expenses for cattle
- Insured Unit: Municipality
- Sum Insured per Unit: Total animal heads per municipality
- Insured Contingency: The economic losses determined in each insured unit as result of calculation of Ultimate Net Loss
- Ultimate Net Loss: If the current Vegetation Index ($V_{lp}$) falls below the guaranteed Vegetation Index level ($V_{lg}$) in a given Insured Unit, this policy will pay the Sum Insured per Insured Unit
- Exclusions: Biological risks, fire and moral hazard events
# COMPARISONS BETWEEN TYPES OF INSURANCE COVERS

<table>
<thead>
<tr>
<th></th>
<th>one farmer</th>
<th>Country wide / regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is covered?</td>
<td>animals of one farmer</td>
<td>To be defined: (1) costs of vaccination, (2) costs of disposal, (3) replacement of the animals, others</td>
</tr>
<tr>
<td>Basis of Total Sum Insured valuation</td>
<td>count of biomass</td>
<td>estimates</td>
</tr>
<tr>
<td></td>
<td>market value</td>
<td>estimation</td>
</tr>
<tr>
<td>Definition of &quot;one loss&quot;</td>
<td>Number of dead animals above a certain threshold due to an insured peril</td>
<td>sum of costs of small losses</td>
</tr>
<tr>
<td>Payment made to who pays the premium</td>
<td>one farmer</td>
<td>one entity</td>
</tr>
<tr>
<td></td>
<td>farmer with state subsidies</td>
<td>a governmental institution with subsidies from international donor organizations</td>
</tr>
<tr>
<td>who acts as insurer</td>
<td>one local insurer or a pool of insurance companies</td>
<td>a pool of insurance companies or a special purpose institution (a captive)</td>
</tr>
<tr>
<td>who acts as reinsurer</td>
<td>international reinsurance companies</td>
<td>international reinsurance companies, capital markets and international donor organizations</td>
</tr>
</tbody>
</table>
The insurance industry will need information to measure:

- **Hazard**
  - Where, how often and with which intensity does an event occur?
  - Which perils can be covered?

- **Vulnerability**
  - What is the damage at a given level of intensity?

- **Value distribution**
  - Where are the various types of insured objects located and what is their value?
  - Which amounts (in $) do we have on risk?

- **Insurance conditions**
  - Who is the policy holder?
  - Who issues the insurance cover?
  - What will be insured?
  - What is the definition of an event?
Agriculture insurance can provide a means of transferring natural disaster risk out of rural farming communities.

- There are successful examples in Mexico, Philippines, Peru etc.

Ex-ante financing for disasters using insurance is a more efficient strategy for helping households recover from losses than ex-post government assistance.

The creation of national catastrophe risk management programs is gradually becoming an integral part of the government major policy priorities. It is of utmost importance to include agriculture and livestock in the process.

Donor organizations should enforce proactive ex-ante risk management on the part of disaster prone developing countries.
Using insurance to finance the most severe risk through government and reinsurance paves the way for sustainable financial mechanisms in the private sector.

Layering the risk allows for a more efficient approach to risk-transfer (government, reinsurers and the insurance market).

Improving financial markets will aid in strengthening rural development, if-and-only-if progress could be made in developing new risk transfer products for natural disasters:

- Lending and savings in rural finance markets could be further extended.
Thanks for your attention
THE WAY FORWARD
The status quo is no longer a solution

The main conditions of insurability must be fulfilled:

- The risk must be quantifiable
- The risk must be unpredictability
- The risk must be mutuality shared
- The risk premium must permit the economic viability of the insurance program

Is there a solution that can address the main concerns of all key holders?

- No simple solution
- Any workable solution would require an intensive dialogue that involves government, insurance industry, global reinsurers, international donors and consumer organizations.
→ Supply side:
  • The potential losses from disasters are a deterrent to the private insurance market
  • Some natural disasters are sometimes too frequent to allow for cost-effective insurance solutions

→ Demand side:
  • The demand is low due to underestimation of the risk and a false sense of security
  • Poor agricultural households can quickly fall below the poverty line by disasters
  • Government activities to reduce the impact of disasters can reduce the demand for risk mitigation at the personal level