Agricultural Insurance for Developing Countries
The Role of Governments

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Agricultural insurance can contribute to growth and poverty reduction

• Agriculture is an uncertain business, and improvements in risk mitigation, transfer or coping can bring about large benefits to vulnerable rural households
• Agricultural insurance can reduce farmer and herder risk and increase average productivity
• Agricultural insurance can increase access to credit
• However, agricultural insurance is only effective when combined with other agricultural risk management measures
World Bank Disaster Risk Financing & Insurance (DRFI) Program

- Increase the financial resilience of developing countries to natural disasters
  - Knowledge management and advisory services
  - Product Development
  - Technical assistance and operations
- Partnerships
  - Academic partners: Wharton School, NTU Singapore
  - Practitioners: Willis Research Network, Geneva Association, brokers, reinsurers
  - Regional development banks: IADB, ADB, AfDB
Agricultural insurance worldwide

Source: World Bank (2011)
Agricultural insurance is under-developed in developing countries

Source: Mahul and Stutley (2010)
Review of agricultural insurance programs in 70 countries
A wide range of crop, livestock, aquaculture and forestry and weather index covers are available internationally.

Source: Mahul and Stutley (2010)
### Indemnity vs index based insurance products

<table>
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<th>Indemnity-based Insurance Products</th>
<th>Index-based Insurance Products</th>
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<tr>
<td>Losses assessed at individual farmer or herder level</td>
<td>Losses assessed using measure of an index that is assumed to proxy actual losses</td>
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| **Crop Insurance Products:**  
  • Damage-based products – include hail and other named-peril insurance  
  • Yield-based products – include MCPI yield shortfall cover and crop revenue insurance | **Crop Insurance Products:**  
  • Area yield-based index insurance  
  • Weather index-based insurance  
  • Normalized difference vegetation index (NDVI) insurance |
| **Livestock Insurance Products:**  
  • Named-peril accident and mortality insurance  
  • Herd insurance  
  • Epidemic disease insurance | **Livestock Insurance Products:**  
  • Mortality risk insurance |
Benefits and challenges of weather based insurance

<table>
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<th>Key advantages of weather based Insurance</th>
<th>Key challenges of weather based Insurance</th>
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<tr>
<td>• Objective and transparent</td>
<td>• Basis risk – the potential mismatch</td>
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<tr>
<td>• Quick payout</td>
<td>between losses and payouts</td>
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<td>• Reduces administrative costs</td>
<td>• Single-risk protection</td>
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<tr>
<td>• Facilitates access to international reinsurance</td>
<td>• High inputs required during development phase</td>
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<td>• Local adaptation – slows scaling up</td>
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The market for index insurance keeps growing (with many small scale pilots) but is still marginal (except India and Mexico)

Index-based agricultural insurance programs (and pilots): Geographic Distribution
Parametric weather based crop insurance product

Illustrative three-phase rainfall insurance contract, indexed to a weather station

1. Seed Sowing & Dynamic Start Date

2. Phase lengths

3. Trigger levels

Phase 1: Establishment & Vegetative Growth
Phase 2: Flowering & Pod Formation
Phase 3: Pod Filling & Maturity

Growing Season Calendar

Indemnity = min (Max Payment, Phase 1 + 2 + 3 Payment)
Government support to agricultural insurance can take several forms

Source: Mahul and Stutley (2010)
Government support to agricultural insurance exceeds 50% of agricultural insurance premium volume

USA & Canada: US$ 7,800 Mio (73% of total AI Premiums)

Asia: US$ 1,800 Mio (50% of total AI Premiums)

Europe: US$ 1,500 Mio (37% of total AI Premiums)

LAC: US$ 260 Mio (36% of total AI Premiums)

Africa: US$ 1 Mio (3% of total AI Premiums)

Australia & NZ: US$ 0 Mio (0% of total AI Premiums)

Source: Mahul and Stutley (2010)
Key Lessons: Promote Public-Private Partnerships

1. Underwrite agricultural insurance through Private Commercial Insurers wherever possible

2. Important areas of government support:
   – Data infrastructure: speed, reliability/quality and transparency
   – Education, training and capacity building
   – Technical support on product design and rating
   – Creation of enabling legal & regulatory framework

3. Exercise caution with agricultural insurance premium subsidies
   – Smart subsidies to support well-defined social objectives

4. In some circumstances, government support as a reinsurer of last resort may be justified

5. Innovations in distribution channels and delivery mechanisms

6. Long-term effort that needs strong political commitment and strong technical counterparts
Scaling up agricultural insurance in developing countries: four main problems to solve

1. Lack of clarity over the respective roles of the public and private sector
2. Lack of the risk market infrastructure necessary to foster agricultural insurance
3. Domestic insurance providers and public decision makers often lack technical capacity
4. Lack of adequate tools and indicators to monitor and evaluate agricultural insurance programs (particularly index based insurance)
Social safety net

Agricultural risk assessment

Premium subsidies

Index based insurance

Livestock insurance

Agricultural insurance pools

Social safety net

Remote sensing

IT solutions

Role of donors

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