

# **Agricultural Microinsurance**

## **An Introduction**

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**SDC Credit & Savings Forum  
Berne, Switzerland  
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# Agenda

- Introduction: rural risk landscape
- Risk management through insurance
- Agricultural microinsurance market
- A primer on index insurance
- Some Livestock microinsurance examples
- Outlook

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# Importance of Agriculture

- Income source for billions of people
- Food security
- Migration
- Poverty alleviation
- Environmental impact
- Exporting cash crops



Source: Author

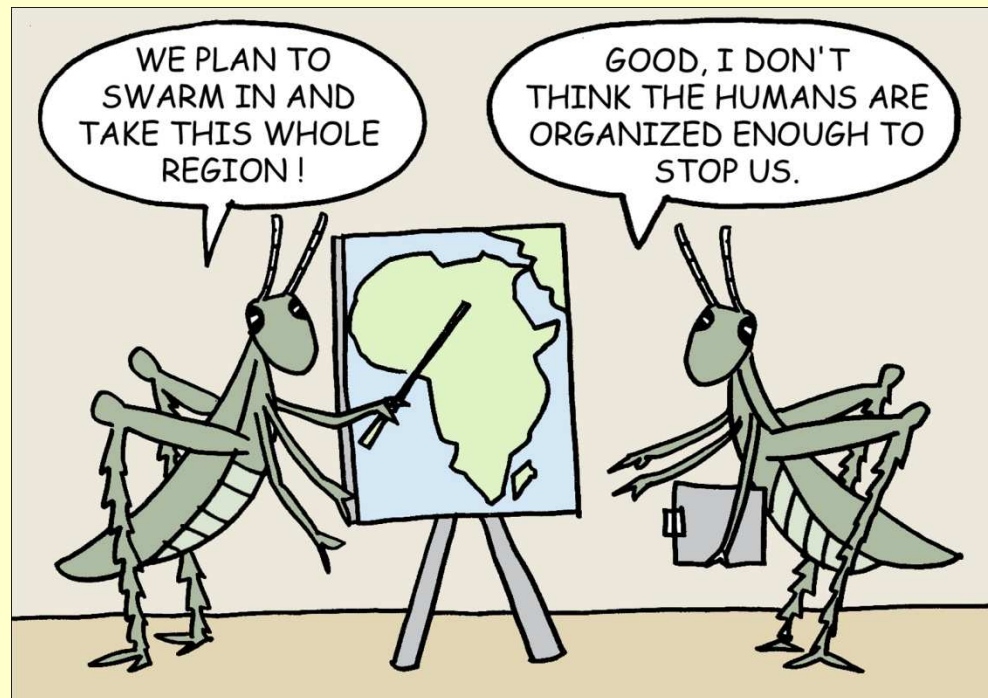
# Rural Risk Landscape

## Hazard

- Weather, fire, pest, disease, theft
- Price, contamination, market access

## Objects at risk

- Crop, livestock
- Warehouse
- Transportation
- Farm input credit
- Revenue



Source: [www.cartoonstock.com](http://www.cartoonstock.com)

# Risk Management & Finance

Insurance approach to risks

- **Type of loss:** assets, lives, income  
Agriculture VC: input costs, production, price, transport
- **Frequency** of the event (is insurance appropriate?)
- Degree of **covariance** (extent of affected people)

Agricultural risk management approach larger:

- Improved inputs
- Access to credit
- Farming techniques: irrigation, pest & disease control
- Storage, market access & info, buying & selling options

# Insurance

... a risk management tool.

“Covers an individual / company / household for some or all of a financial loss that is linked to an unpredictable event or risk, via risk pooling and the payment of a premium”

# “Microinsurance”

## WHAT

- Risk-pooling products that are designed to be appropriate for the *low-income* market in relation to cost, terms, coverage, and delivery mechanisms

## IS

- MicroCredit can help people improve
- MicroInsurance helps them protect the gains

## MICROINSURANCE?

# Insurance risks

Risk	Definition	Controls
<b>Adverse Selection</b>	People with a higher than average risk getting cover at the average premium rate	<ul style="list-style-type: none"><li>➤ Group insurance</li><li>➤ Proxy screening</li></ul>
<b>Moral Hazard</b>	Change towards riskier behaviour because of insurance	<ul style="list-style-type: none"><li>➤ Co-payments</li><li>➤ Extension services</li><li>➤ Peer controls</li></ul>
<b>Fraud</b>	Intentional perversion of the truth	<ul style="list-style-type: none"><li>➤ Claims sampling</li><li>➤ Market education</li></ul>
<b>Covariant Risk</b>	Affects large numbers at once	<ul style="list-style-type: none"><li>➤ Cover limits</li><li>➤ Reinsurance</li></ul>



# Agro Insurance Products



## Crop:

- Single peril
- Multi peril
- Yield



## Livestock:

- Single head / herds
- Named perils
- Mortality

# Agro Insurance Implemented

**Mainly found in rich countries, due to:**

- Historically strong farmer lobbies
- Most highly subsidized: average 68% of total crop premium\*
- WTO rules for subsidies in agriculture

**Some issues for developing countries:**

- Budget constraint
- Lacking data
- Infrastructure
- Index set-up costs & scalability

\* source: Government Support to Agricultural Insurance, World Bank, 2010

# Product Design Approaches

## Traditional Agro-insurance:

- Farm-specific contract
- On-site loss appraisal
- True insurance
- High transaction costs
- Prone to moral hazard and fraud

## Weather Index:

- Uniform product
- Central loss calculation
- De-correlation loss / actual payout
- Low transaction costs
- Moral hazard & fraud eliminated

# Agro Microinsurance

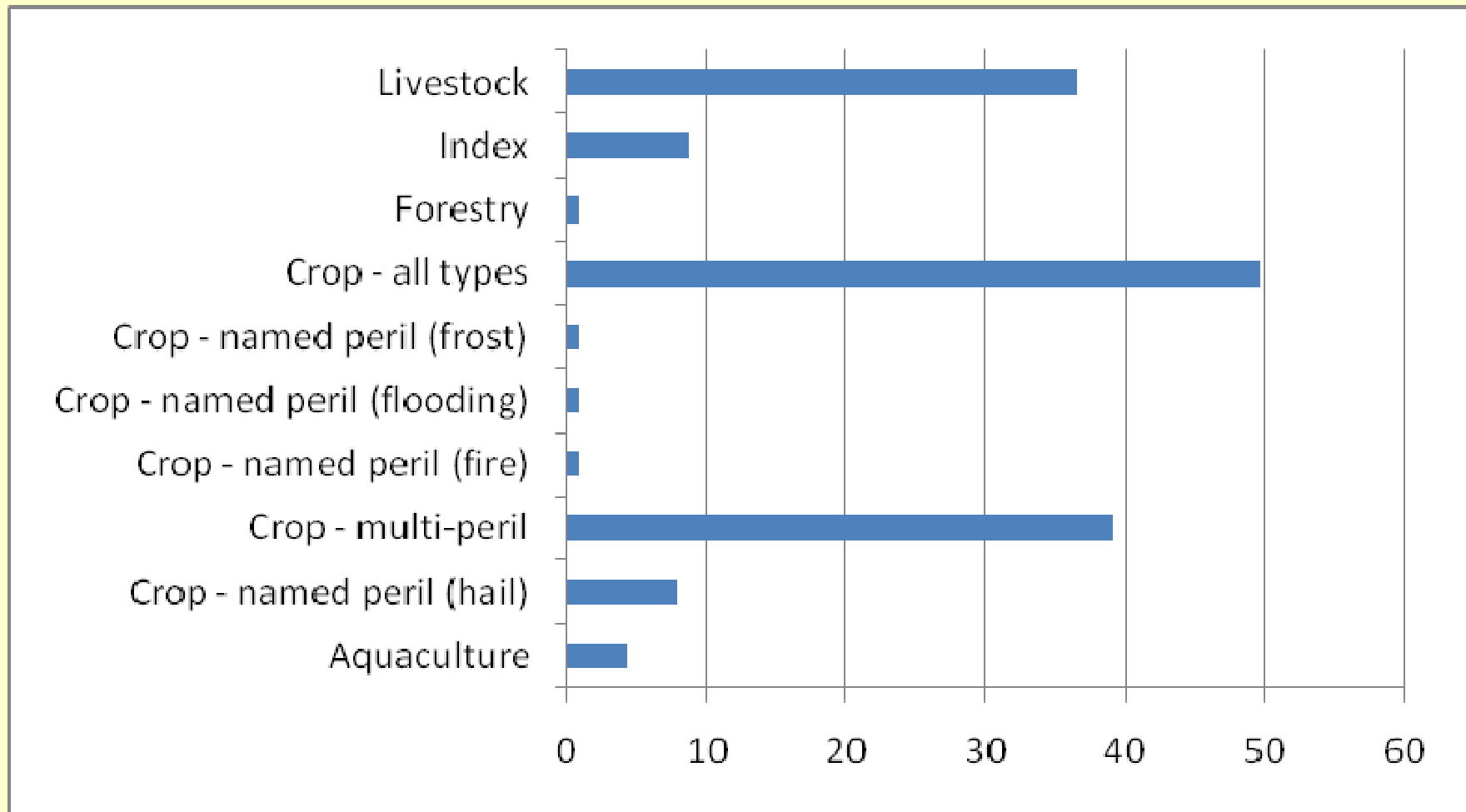
## Specific challenges in rural settings:

- Seasonality of income (-> premium payments!)
- Distribution
- Control & Monitoring
- Trust

## Product Design Elements:

- Insure pre-existing groups of farmers only
- Link to other services (seeds, fertilizer, trade, credit etc)
- Payout in vouchers, not cash
- Distributed by trusted partners (e.g. extension workers)

# Implementation by Product Type



# Some Figures

## Comprehensive studies are missing, but:

- In the world's 100 poorest countries (2007<sup>1</sup>): 5.4 million crop policy holders identified – and only 40'000 for livestock
- In Africa (2009<sup>2</sup>): 80'000 agricultural microinsurance policies
- 60% of all agricultural insurance products sold to low-income farmers are found in Latin America (2008<sup>3</sup>)
- Index (2010<sup>4</sup>): 2.5 million beneficiaries (India: 1.3 million, Mexico: 800'000)
- Global Ag-Insurance premium increase from USD 8bn to USD 20bn in 2004 – 2007<sup>5</sup>

<sup>1</sup> J. Roth et al, *The Landscape of Microinsurance in the World's 100 Poorest Countries*, (2007)

<sup>2</sup> M. Matul et al, *The Landscape of Microinsurance in Africa* (2009)

<sup>3</sup> Roth and McCord, *Agricultural Microinsurance: Global Practices and Prospects* (2008)

<sup>4</sup> IFAD & WFP, *The Potential for Scale and Sustainability in Weather Index Insurance* (2010)

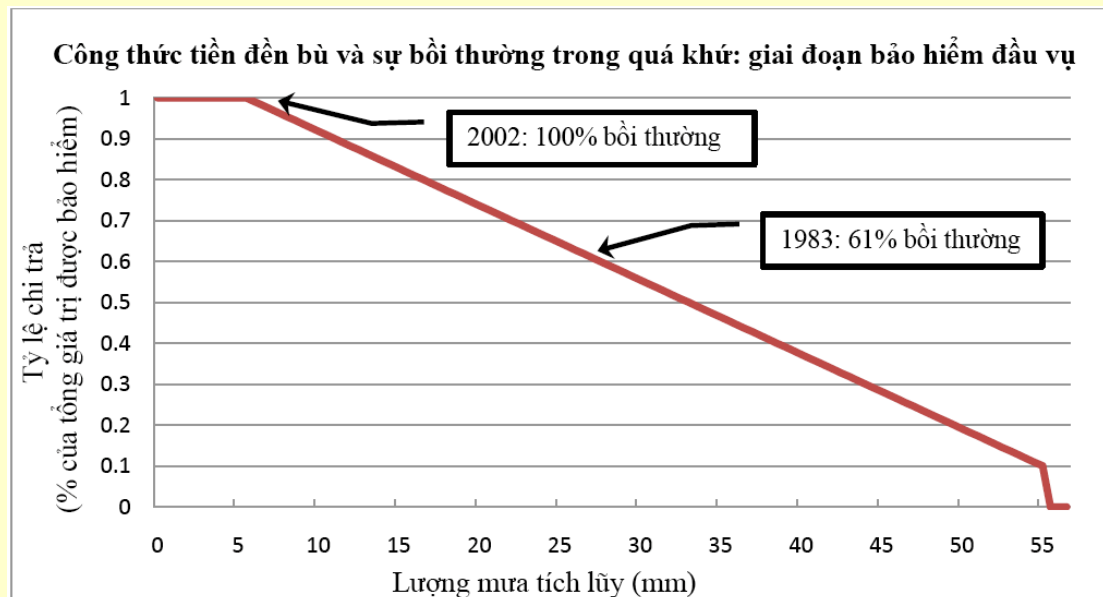
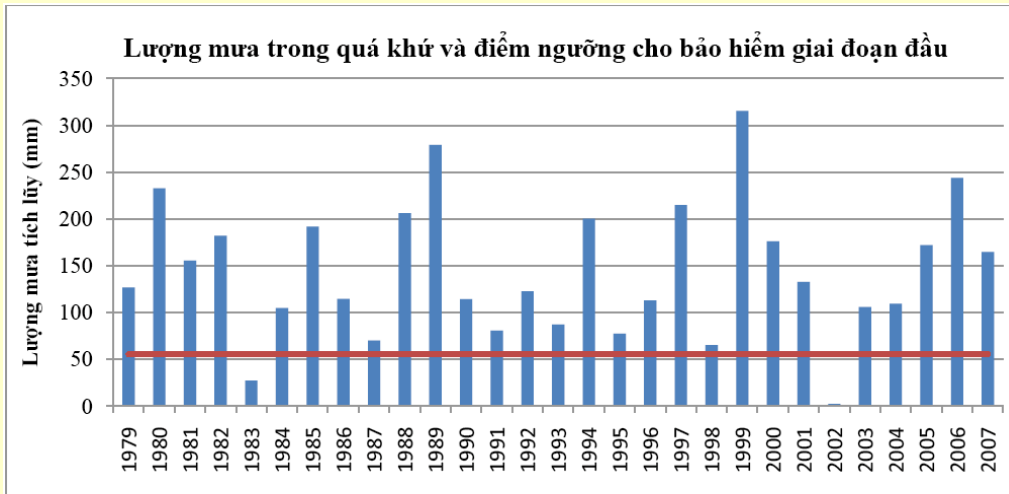
<sup>5</sup> O. Mahul, C. Stutley, *Government Support to Agricultural Insurance* (2010)

# A Primer on Index Insurance

## Basic principle of index insurance

- Measures a proxy for farm yields, not individual losses
- Typical proxies:
  - **Climatic phenomena**, such as rainfall, temperature
  - Peers in similar situation (**area yield, mortality**)
- Measurement: on the ground or remote sensing
- Claims payout depends on data measurement, not on actual loss
- All insured get the same payout per insured unit
- For crops: weather index, area yield
- For livestock: vegetation index, mortality

# Rainfall Index Viet Nam





# Challenges in Index Insurance

- High set-up costs
- Basis risk: imperfect correlation between individual farmer's result and index
  - Micro-climates
  - Measurement networks
  - More than one risk factor
- Historical meteo data
- Marketing: how to explain to a small-holder?
- Potentially: regulation

# SHEPARD livestock scheme in India

- **Distributor:** NGO
- **Risk carrier:** Commercial Insurer
- **Typical premium:** \$9 (4% of value of animal)
- **Typical cover:** \$225
- **Typical term:** 1 year
- **Adverse selection defences:** Sell to pre-existing group only, pre-screening of livestock by vet
- **Moral hazard defences:** Ongoing screening, limited loan term, post mortem
- **Fraud defences:** Cultural taboos on poor treatment of livestock, post mortem, tagging and photographing of animal
- **Keeping costs down:** Many costs absorbed by the NGO, marketing of insurance linked to marketing of loan product, marketing done at cattle clinics by vets

# Developments & Outlook

- Focus on index-based products, though success stories are rare
- Insurance for aggregators, not individuals
- New players: Brazil, India & China, all with strong governmental involvement
- Technology: RFID tags for livestock, satellite imagery for crops and livestock
- Concerns over food security and climate change
- Renewed interest in agriculture and specific donor interest in rural / agricultural microinsurance

# Points for Discussion...

... and for evaluating an agricultural MI product/project

- Who is the beneficiary: farmer, lender or other?
- What is insured: inputs, loan, crop – single / multi peril?
- Financials: premium rate, anticipated loss ratio, admin rate
- How much subsidies and are they secure?
- How many clients reached – upscale potential?

We still have a long way to go...

Enjoy the seminar !

