Climate Risk Management
Case Study: Mexico

Josh Ling – 11 April 2013
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Who and Where?

- From Sydney, Australia
- Fellow of the Institute of Actuaries of Australia (FIAA)

- ILO Microinsurance Fellow in Mexico City
  - Asociación Mexicana de Uniones de Crédito del Sector Social (AMUCSS)
  - Network of rural finance providers
What is the Mexican setting?

- Agricultural sector employs 21% of labour force
- Agriculture accounts for 3.8% of GDP
- Agriculture is predominant source of income for rural clients

- Large country, varying climates
- At high risk of natural disasters
  - Drought represents 80%
  - Tropical cyclones represent 18%

- Most insurance products: 50% concentration in Mexico City
- Mexico City contains 20% of the population
What is in place?

- Receives budget support from Mexican government
- Catastrophic bonds worth $300 million

- Insurance to state governments
- Parametric insurance programmes
- Insurance funds
Insurance funds

• AGROASEMEX created scheme of self-insurance funds
• Farmers must form a group (a fund)
• AGROASEMEX sets premiums (by region, crop, weather event)
• AGROASEMEX subsidises premiums
• Premiums of fund sit together to pay claims of fund
• Indemnity coverage
Insurance funds

- North Mexico –
  - Large extensions of land
  - Higher technology
  - Better access to credit
  - Better marketing, commercialisation

- South Mexico – the same scale requires far more producers

- RedSol Agrícola plays the role of aggregator

- Agroasemex provides subsidy and reinsurance
RedSol Agrícola: Product

- Insurance Coverage

- Climatic Risks
  - Over investment.
  - By plant.
    - Drought.
    - Flood.
    - Hail.
    - Fire.
    - Drop in temperature.
    - Frost.
    - Hurricane.
    - Cyclone.
    - Winds.
    - Tornados.

- Biological Risks
  - Plagues.
  - Sicknesses.
RedSol Agrícola: Product

Premium

30% ➔ Reinsurance (Agroasemex)

70% ➔ Insurance Fund

25% ➔ Operating Expenses

75% ➔ Insurance risk reserve
RedSol Agrícola: Product

• Plays role in rural development: premium is reinvested

Risk Reserve > Claims
Remainder divided between contingency reserves (25%), a protection fund (5%) and a social fund (70%) used for,

• Lower insurance costs next year
• Training
• Equipment
RedSol Agrícola: Product

Risk Reserve < Claims

Reinsurance covers the shortfall
Learning – Government

• Government insurance company (AGROASEMEX)
  • Mission with social objectives
  • Implicit government oversight
  • Efficient sharing of risk – ability to diversify at government level

• Use of private sector to make binding agreements (as well as reinsurance)
Learning – Individual Microinsurance

• Rural development through reinvestment of insurance profit
• Engagement of policyholders
• Use of pre-existing groups
  • Encourages cooperation within communities
  • Scale is reached more quickly
• AGROASEMEX as centralised entity to set premiums, reserving
  • Government has the best data to price
• Provision of reinsurance as a means of subsidising the programme
  • (although premiums are also subsidised)
Learning – Individual Microinsurance

• Evident patterns of selection of coverage by region and crop
  • Farmers know what their risks are
• Difficulty in designing an all-inclusive scheme
  • Do not want to exclude the poorest
• Parametric insurance can work well at a macro level
• But on a micro level,
  • Basis risk becomes a bigger issue, and
  • Indemnity coverage becomes difficult over a large portfolio
  • Can group structures be utilised for a hybrid approach?
Gracias.

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