INDEX INSURANCE FOR AGRICULTURE: RECENT EXPERIENCES FROM LAC

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February 15, 2013

Agenda

- Index Insurance.
  - Catastrophic Risks
  - Risk agreggated products.
- Index Insurance for the Livestock sector.
  - Argentina & Uruguay case studies.
- The Hurricane Track Index: There is no a single solution that fits all.

There are many risk financing instruments ¿Which one to choose?

Type of Instrument	Resources available expost
Contingency Budget	Little
Budget allocation	Little
Contingency Loans	Medium
Index Insurance / Derivatives	High
Traditional Insurance	High
Otros	

They are not necessarily intended or labeled to meet the impact of natural hazards.

Effective options but often expensive ones.

Type of Agriculture Index-based Products

Item/ Type of product	Micro Level	Meso Level	Macro Level
Insured	Individual Farmers	Financial institutions, Co-operatives, others	Governments
Insurable interest	Financial loss associated with crop-yield losses due to adverse weather risk.	Financial loss associated with correlated production risks in a geographic region. .- **Meso level:** Credit loan defaults .- **Macro level:** Financial resources affectation.	
International Experience	**Pilots**: Ethiopia, Ghana **R&D stage**: Tanzania, Mali, Senegal, Burkina Faso, Vietnam, Indonesia	**Pilot**: Millennium Villages (Kenya, Ethiopia, Mali), Ghana (2011), Peru (2011) **R&D**: Vietnam, Dominican Republic	**Commercial**: Mexico (since 2003), Ethiopia (2006), Malawi (since 2008/09), **R&D**: African Risk Capacity Project (a new proposal 2011), Argentina, Uruguay, Dominican Republic.

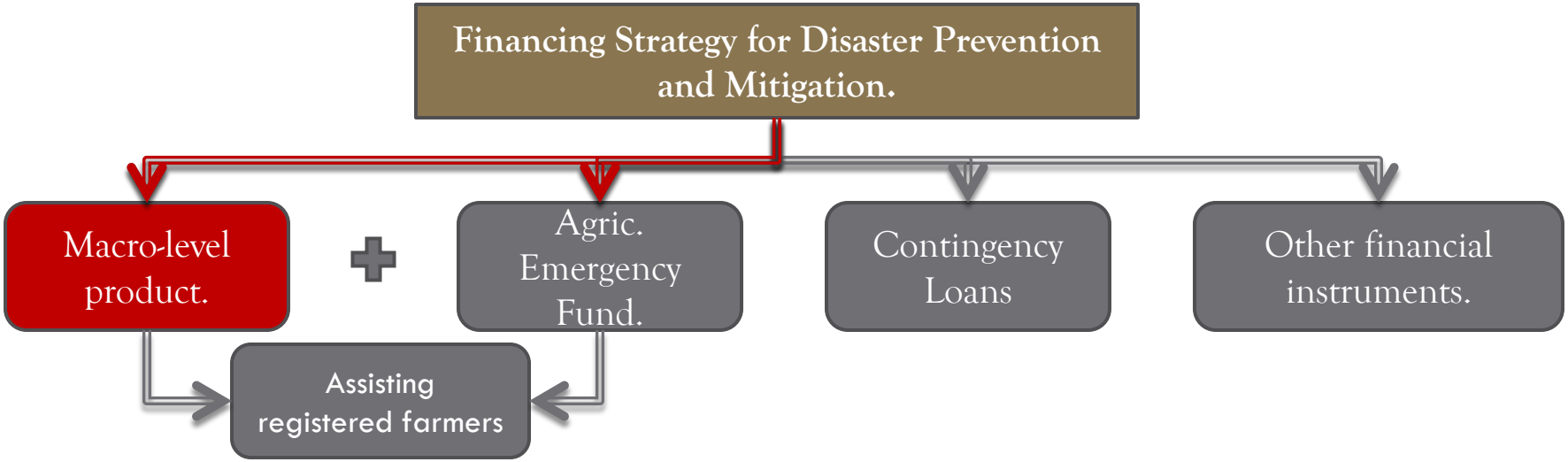
Designing and scaling up Index-based insurance is not an easy task!

- High transaction costs (especially on micro-level contracts)
- Premium pricing
  - Absence of historical data and/or bureaucracy.
  - No actuarial fair pricing
- Product issues
  - Limited risk covered.
  - Basis risk.
  - Not easily replicable.
- Demand related challenges
  - Small transactions.
  - Ability and willingness to pay
  - Lack of awareness
- Potential legal and regulatory issues.

Focusing on catastrophic risks and working with risk aggregator products can overcome some limitations of micro-level products.

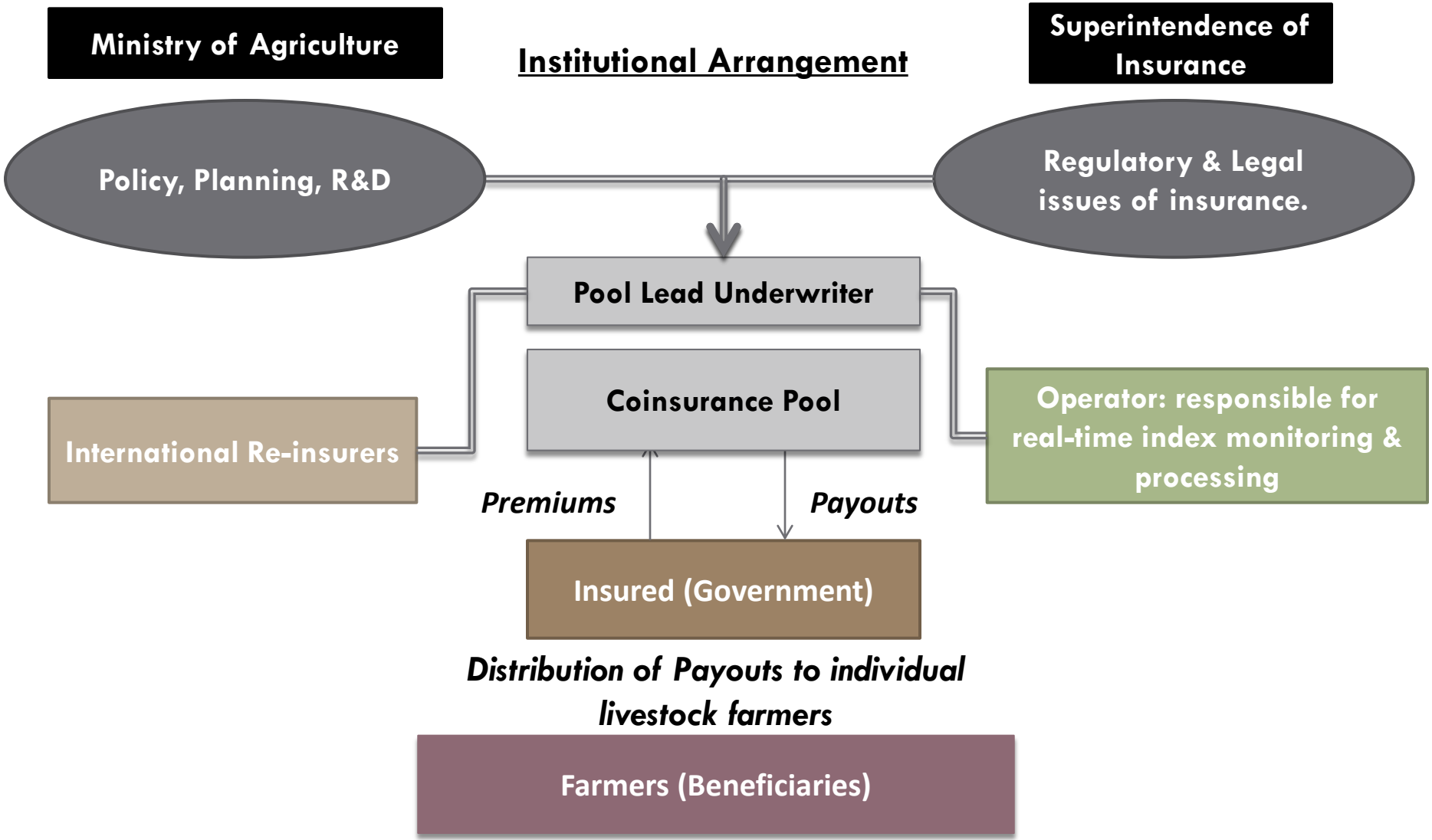
- There are several advantages of working with catastrophic risks and with risk aggreator index products:
  - Less data demanding.
  - Attractive premium volume.
  - Basis risk is less important.
  - Transaction costs are simplified = only one client – one head.
  - Promote link transaction among stakeholders (i.e. input suppliers, technical assistance delivery, credit, others).

Macro level index-based products should be part of a broad Risk Financing Strategy

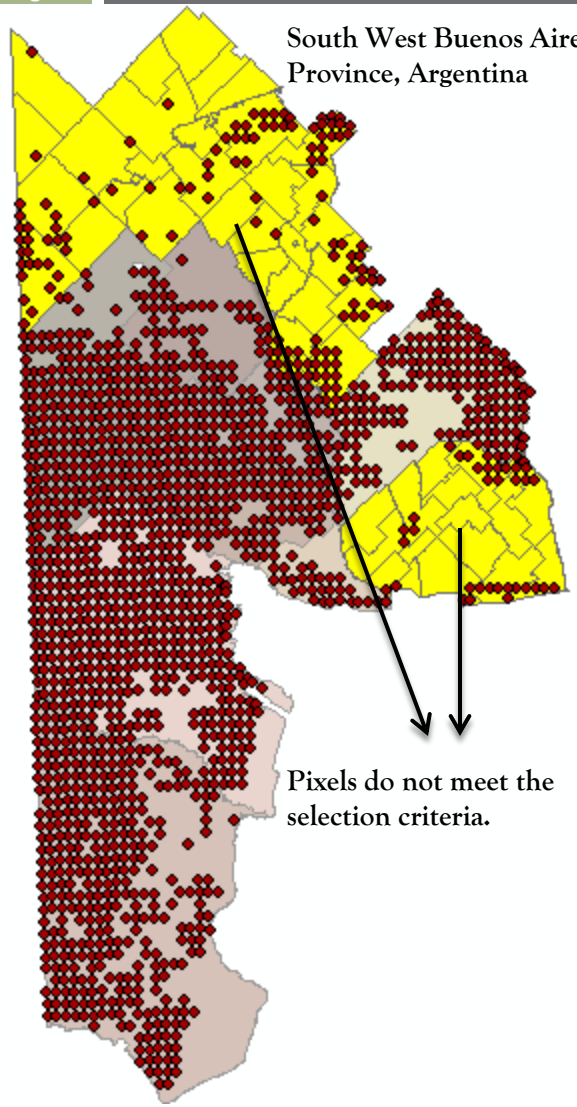


- Macro level insurance products are not intended to replace other instruments and risk financing mechanisms, but to complement them.
- Generally, index based insurance products focused on single risks
  - What to to when the insured sector is affected by a not covered risk?

A Macro-level insurance scheme requires the collaboration of both the public and the private sector.



In Argentina, a macro level NDVI insurance may reduce the Governement fiscal resouces volatility.



- **Sum Insured: AR$334 millones.**
- **Operation: Actual** NDVI vs NDVI trigger value.
- **Insured:** National or Federal Government..
  - Beneficiaries: +-8 thousand farmers.
  - Cows insured: 764,186 = **89.56**% of the total number.
  - Heifers insured: 294,521 = **89.66**% of the total number.
- **Period of coverage:** Flexible. Spring (1 Sept– 30 Nov) y Autumn (1 Mar – 31 May).

- What would have been the benefit of purchasing this insurance policy?

What would have been the benefit if it would have received in terms of claims payouts? – 1982/2009

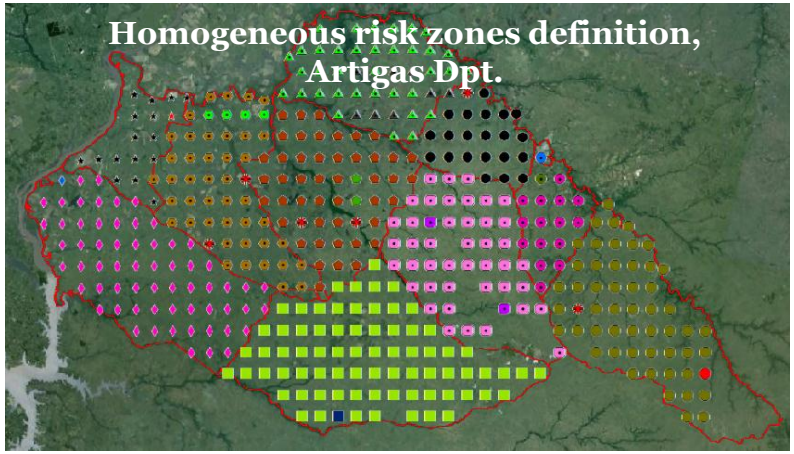
Time Period (most recent Years)	Accumulated Premium (AR$)	Accumulated Claims Payouts (AR$)	Claims to Premium Ratio (Benefit : Cost Ratio)
20	531,492,646	336,185,167	63%
15	398,619,484	230,475,563	58%
10	265,746,323	191,359,592	72%
5	132,873,161	166,562,495	125%
2	53,149,265	136,148,550	256%
1	26,574,632	96,359,499	363%

NOTE:
- Analysis is based on a 12-y payout frequency period.
-Aprox. annual premium: AR$ 27 million.

- Over the past 10 years (2000/09) the Gov would have received AR$0.72 for every AR$1.00 spent in insurance premiums.
- The Benefit to Cost Ratio would have significantly risen if the same analysis is looked over the past five, two and one years.

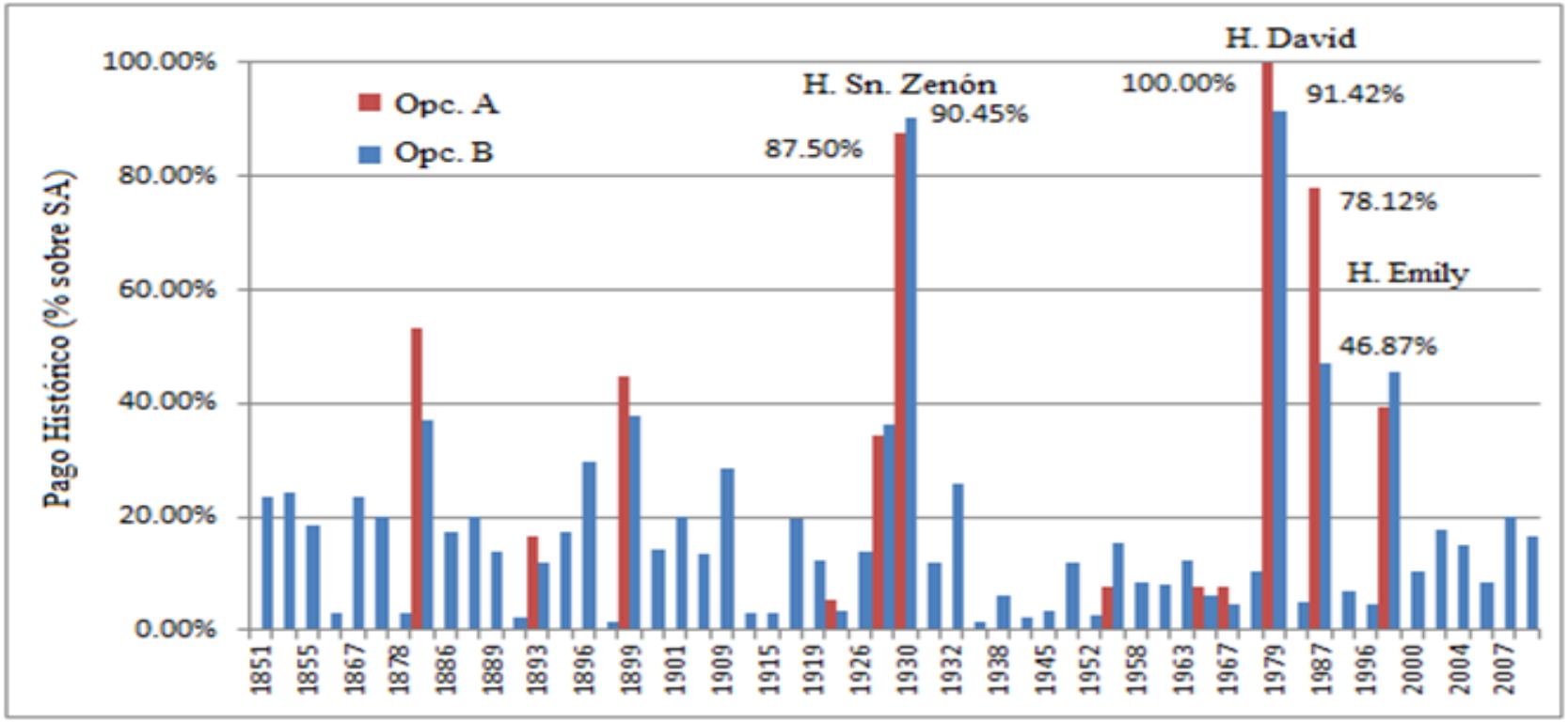
Why the implementation of a Micro-level NDVI product is unfeasible to implement in Uruguay (and in Argentina)?

- **Limitations**
  - **Basis Risk (major constraint):** the pixel spatial resolution is 2500 Ha = bigger than some individual farms.
  - **Lack of distribution channels:** Insurencae companies does not have enough branches in rural areas.
  - **Low product demand = low premium volume** = business uncertainty.
  - **High administrative costs.**
  - **Lack of operational capacity to provide services to individual farmers.**



- The basic geographical unit for the definition of homogenous riks zones were the Sección Policial.
  - Larger geographic units = inability to capture variations.
  - Very small geographic units = impractical from the operational point of view.

The suggested product in DR seems it has captured the most extreme & the most important Hurricane events…but



- Contract Options:
  - Opt. A: The policy triggers a payout when the path of a H2 or above intersects one of the Insured Units
  - Opt. B: The policy triggers a payout when the path of a TS or above intersects one of the Insured Units.
- The path of H. Sn Zenón, H. David, H. Emily has caused the most severe losses ever recorded in DR.

What would have happeded in 2012 with H. Isaac.?

H. Isaac caused millionare losses to the Agric. Sector,but the policy wouldn´t have triggered a payment.

- Minor Tropical Cyclone events (TS, TD) have also caused major losses in the past, mainly due to excess of rainfall and flooding.
- Lack of infrastructure maintenance (i.e. dams sedimentation) increases the sector vulnerability.

Future?

- Macro/Meso vs. Micro (where's our role and competitive advantage)?
- Insurance as the "entry point" to make the agriculture risk management system more effective and efficient.
- Operationalizing the work done through the technical assistance and feasibility studies.

Gracias!

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Annex

Guatemala ENSO index insurance

El Niño Insurance for Drought: Product Description

- **Obj. Protect the fiscal resources against extreme drought events related to El Niño**
- **Contract Details:**
  - **Database:** ENSO 4* (Contract calibration – Grids **1979/2009 and SPI estimation)**
  - **Period of coverage:**
    - Primera: 1 May - 31 Aug.
    - Postrera: 1 Sept- 31Dec.
  - **Operation: Compares actual ENSO values with triggers.**
  - **Sum Insured: Declared value:** (ej- cost of rations).
  - **Options:**
    - Opt. 1. National contract aggregated by Dpt.
    - Opt. 2. National aggregated contract.