Issues and Challenges in Implementing Parametric Insurance in the Philippines: Lessons Learnt and Recommendations

10 February 2017
Outline: The Philippines Case

I. Factors Affecting Agriculture Micro insurance

II. Natural Catastrophes and Crop Insurance

III. Index Insurance Overview and Philippines Experience

IV. Lessons Learnt

V. Recommendations
I. Factors Affecting Agriculture Insurance Development in the Philippines: Internal and External Factors

- High Input Cost
- Underdeveloped Agro System
- High Agro Loan interest
- Low Production
- Underinsured pooled risks
- Ageing Labour Force

Agriculture Microinsurance Policy Framework

Agri-Agra Law
I. Factors Affecting Agriculture Insurance Development in the Philippines: Internal and External Factors

- Unfair Regional competition
- Lack of Reinsurance
- Extreme Weather Risks
- (-) Impact of Trade

Low Credit and Crop Insurance Supply and Demand
II. Natural Catastrophes and Crop Insurance in 3 Provinces, Philippines

Adoption of crop insurance, all crops, 2007-2011.

<table>
<thead>
<tr>
<th>Type of insurance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.Ecija</td>
</tr>
<tr>
<td>Traditional</td>
<td>73</td>
</tr>
<tr>
<td>Weather-index based</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Tanzo, I. The Pinoy Rice Farmer. PhilRice
II. Natural Catastrophes and Crop Insurance

2012 Crop Insurance Penetration Rate, Philippines

Enrolment Rate: **6.96%**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Insured Farmers</th>
<th>Insured Hectares</th>
<th>Amount of Cover (Insurance, Php M)</th>
<th>GoP Premium Subsidy (Php M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>202,259</td>
<td>302,935.89</td>
<td>5,585.063</td>
<td>318.226</td>
</tr>
<tr>
<td>Corn</td>
<td>12,562</td>
<td>14,067.17</td>
<td>254.515</td>
<td>15.545</td>
</tr>
<tr>
<td>Total</td>
<td>214,821</td>
<td>317,003.06</td>
<td>5,739.578</td>
<td>333.771</td>
</tr>
</tbody>
</table>

Source: PCIC, 2012
## II. Natural Catastrophes and Crop Insurance

<table>
<thead>
<tr>
<th>Reasons for Buying Crop Insurance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N. Ecija</td>
</tr>
<tr>
<td>Peace of mind/security</td>
<td>20</td>
</tr>
<tr>
<td>Access to credit</td>
<td>37</td>
</tr>
<tr>
<td>Influenced by other farmers</td>
<td>17</td>
</tr>
<tr>
<td>Attractive policy</td>
<td>47</td>
</tr>
<tr>
<td>Just want to try</td>
<td>0</td>
</tr>
<tr>
<td>Subsidized by seed grower</td>
<td>3</td>
</tr>
</tbody>
</table>

*Reason for **not insuring**: addn’l prodn cost

Source: Tanzo, I. The Pinoy Rice Farmer. PhilRice
Household Risk Coping Mechanisms in Four Provinces, Philippines

Source: GIZ Study on Risk Coping Mechanisms in Four Provinces
III. Index Insurance Overview and the Philippines Experience

Weather Index Insurance: Rainfall as the “Index”
What is Index-based Insurance?

Instrument for Measuring Weather Index Insurance (ex. Rainfall): Automatic Weather Station
Index Insurance: Trigger

Flood
Rainfall, mm
Drought
Hybrid Index Insurance: Rainfall as Trigger; Area Yield to determine Pay-out

Nueva Ecija yield estimate map, Wet season 2014

<table>
<thead>
<tr>
<th>Yield estimate (kg/ha)</th>
<th>5303</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement (%)</td>
<td>90</td>
</tr>
</tbody>
</table>
## Comparison: Multi-Peril Crop Insurance, Index Insurance

<table>
<thead>
<tr>
<th>Multi-Peril Crop Insurance</th>
<th>Index Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various perils covered (Flood, Drought, Hailstorm, Fire, Pest and Diseases, etc.)</td>
<td>Either: Excess Rainfall (Flood), Lack of Rainfall (Drought), Temperature, Typhoon, etc.</td>
</tr>
<tr>
<td>Individual farm adjustment</td>
<td>One overall measurement</td>
</tr>
<tr>
<td>Higher Premium (10%-12%)</td>
<td>Lower Premium: ≥ 3%-6%</td>
</tr>
<tr>
<td>Individual farm lot assessment (slower)</td>
<td>One-off measurement (faster)</td>
</tr>
<tr>
<td>Individual assessments and payments based on damage</td>
<td>One uniform payment</td>
</tr>
<tr>
<td>Disadvantage: Moral hazard; limited expansion; high admin cost</td>
<td>Disadvantage: Basis Risk: Risk that Payment ≠ Damage</td>
</tr>
</tbody>
</table>


RIICE Dry-test

Timeline of the core processes

**Explanation**

The RIICE project deliverables (product, distribution, yield estimates) need to be delivered at the right time in the course of the underlying processes (crop cycle, loan cycle etc.).

**Underlying core processes**

- **RIICE Project deliverables**
  - Insurance product design and tariff
  - Product marketing and distribution
  - Service to customer and distributor / agents
  - Claims payment process (*insurer & distributor*)
  - Monitoring and yield estimates
- **Philippine stakeholders deliverables**
  - Sales cut off, w/ Flood cover
  - Sales cut off, w/o Flood cover
  - Final Yield Pay-out, day 120
  - Option for early pay-out, day 72

**Crop cycle**

- **Loan cycle (Peak)**
- **Insurance product cycle**
  - SAR-based loss & yield monitoring
- **2014**
## Insurance product features

### Key Inputs and deliverables

<table>
<thead>
<tr>
<th>Product design</th>
</tr>
</thead>
</table>

| **Product type:** | *Area-based yield index* |
| **Risks covered:** | *Flood, drought, typhoon, pest and diseases* |
| **Sum insured:** | *Agro Loan (rice), Min Php5,000 – Max 15,000* |

### Summary Technical rates per municipality:

<table>
<thead>
<tr>
<th><strong>2.79% (DS)</strong></th>
<th><strong>5.5% (WS)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>on average in 6 municipalities in Leyte @80% coverage</em></td>
<td></td>
</tr>
</tbody>
</table>

### Description of commercial loadings:

- **Basic rate:** \( \text{Net Premium} / (1-(XX\% \text{ Overhead} + XX\% \text{ Profit Margin} + XX\% \text{ Commission})) \)
- **Gross Rate:** \( \text{Basic Rate} \times (1+(12\% \text{ VAT} + 12.5\% \text{ Documentary Stamp Tax} + 0.2\% \text{ Local Gov’t Tax})) \)

### Type: Compulsory

Current distribution channel: *MFIs, Rural Banks*
### Wet Season, 2014

<table>
<thead>
<tr>
<th>Policy</th>
<th>Pest/Disease Included</th>
<th>Province</th>
<th>Leyte</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Municipality</td>
<td>Ormoc</td>
</tr>
<tr>
<td>70.00%</td>
<td>2.75</td>
<td>2.0</td>
<td>3.51</td>
</tr>
<tr>
<td>80.00%</td>
<td>3.14</td>
<td>4.5</td>
<td>3.51</td>
</tr>
<tr>
<td>90.00%</td>
<td>3.53</td>
<td>8.3</td>
<td>3.51</td>
</tr>
</tbody>
</table>

Note: The underline indicates the forecasted guaranteed yield.
SAR-technology & insurance features

Key Results of the Simulation @ 90% average yield coverage

Pay-out in 2 out of 6 Municipalities in 6 cropping seasons, 2012-2014 @ 90% coverage

<table>
<thead>
<tr>
<th>Details</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical premium rate</td>
<td>Php7,587,720.00</td>
</tr>
<tr>
<td>Rice Farmers Covered:</td>
<td>5,084</td>
</tr>
<tr>
<td>Gross Pay-out:</td>
<td>Php414,430.18</td>
</tr>
</tbody>
</table>
IV. Philippines Lessons Learnt: Government Policy

1. Current financial penalties for banks that do not meet the 25% required allocation under the Philippines Agri-Agra Law is not effective in encouraging crop insurance product development, and reigning in demand.

Agriculture loan portfolio was 14.4% out of 15%; and agrarian loan portfolio was 1.1% out of 10% required in 2015.

2. A Policy Framework on Agriculture Micro insurance is not enough to mobilize the Philippine Agriculture insurance market.
IV. Philippines Lessons Learnt: Product Level

3. Area Based Yield (ARBY) Index insurance works! Had payouts in 2 out of 6 municipalities in Leyte Province in 2012-2014 based on actual yield results!

4. Area Based Yield index insurance for rice using remote sensing can be done in the entire Philippines! DA is gathering rice yield data for ALL MUNICIPALITIES in the Philippines using remote radar satellites, which can be used to insure area yields.
V. Philippines Recommendations: Government Policy

5. A direct and strong link between access to agriculture credit and agricultural insurance has to be addressed through the Philippine Agriculture Microinsurance Policy Framework.

6. A separate and dedicated joint Circular strengthening access to finance on agriculture, and access to agriculture microinsurance, among the Department of Agriculture, Central Bank (Bangko Sentral), the Department of Finance and the Insurance Commission could aid market development.
V. Philippines Recommendations: Government Policy

7. More incentives (limited tax deduction?) for banks who offer agro credit in partnership with the Philippines Department of Finance, Department of Agriculture and the Bangko Sentral could mobilize agriculture finance and insurance.

8. Philippine Government smart subsidies that increase agricultural competitiveness must be provided through the Department of Agriculture along with access to finance and agricultural insurance development.
V. Philippines Recommendations: Government Policy

9. Lowering tariff for all index insurance products distributed by the private insurance industry, lower than property insurance, up to a level allowed by Philippine law, could entice companies to engage.

10. Creation of a pool of insurers offering agriculture insurance through the Insurance Commission, PIRA and established distribution channels.

   a. Nationally pooled risks for natural catastrophes, assignment of share of risks for all participating non-life insurance companies; and corresponding reinsurance
V. Philippines Recommendations: Government Policy

11. More studies on agricultural insurance at the macro, meso and micro levels in the time of climate change are needed to understand the financial impacts of NatCats, and create effective options for insurers to develop products that manage risks and losses adequately.

12. Creation of a data sharing protocol for insurance addressing the following issues:

- Data granularity: level of aggregation
- Who can access the data
- Cost of accessing data
- Policy governing data use
- Legal independence of data source
V. Philippines Recommendations: Government Policy

13. Delimit the features of weather index insurance by allowing all stakeholders to choose the level of insurance protection they prefer against natural catastrophes, instead of insuring specific crops.

   a. Design weather index insurance products on a unit basis ex. P5,000, P10,000, etc.
   b. Targeting all stakeholders in the agro value chain
   c. Require proof of insurance interest
   d. Use satellite-powered weather data to ensure uninterrupted monitoring
References:

References:


5. FAO, CTA, IFAD. 2014. Youth and Agriculture: Key Challenges and Concrete Solutions.

6. GIZ MIPSS. 2010. Study on Demand Insurance for Natural Catastrophes. Manila, the Philippines.

Thank you

www.inclusiveinsuranceasia.com