

INDEX-BASED INSURANCE

A TOOL TO SECURE FARMERS AND DEVELOP AGRICULTURE BASICS AND EXPERIENCES

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IIIF 2019

The International Insurance Forum

Skopje, Macedonia

CEE & SEE - Regional Actuarial Insurance Conference

28 February 2019

Skopje, Macedonia

AGENDA

Introduction to index-based insurance

- Answer the farmer needs
- Basics of Index-Insurance
- Value Chain approach

Experience Sharing

- Innovative products
- Pricing
- Stakeholders
- Key success factors

Challenges and Opportunities

- Market education
- Rural finance / Innovative models



INDEX INSURANCE

ANSWER THE FARMER NEEDS

Crucial need for **agricultural risk mitigation tools** :

- In times of poor harvest, farmers suffer revenue losses and are frequently forced to dip into their savings in order to sustain themselves. In case of debt, the inability to pay back can exclude them from contracting another credit.
- In addition, this precarious situation impedes them from investing in better quality inputs and equipment as they are exposed to risk due to the probability of poor harvest.

Scope of main insurable **agricultural risks** :

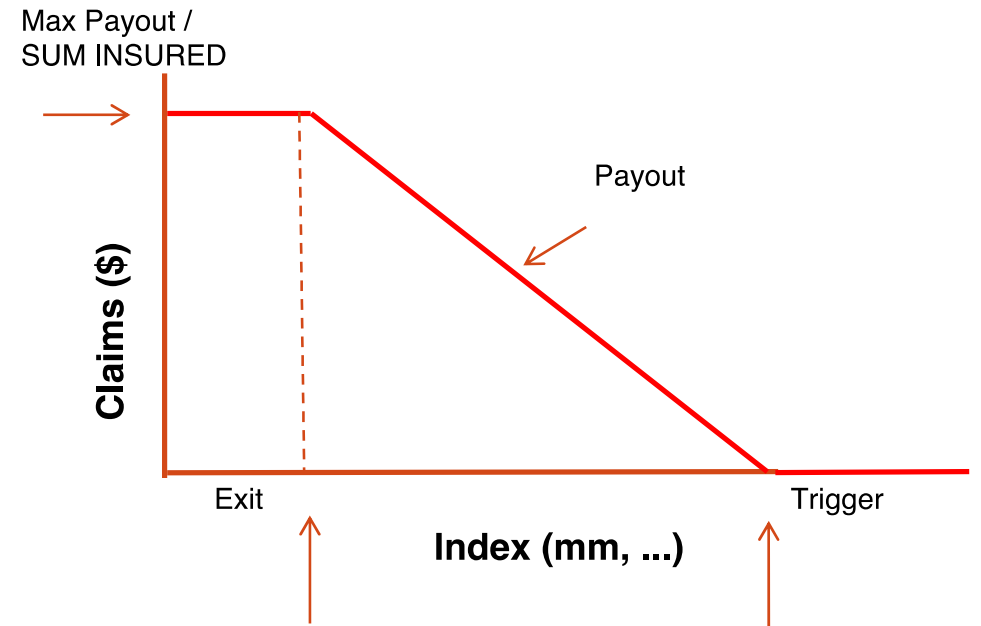
- Livestock (death and/or diseases)
- **Crop Production (crop loss)**
- Sales (stock insurance)
- Production Tools (farm, machinery)

⇒ Agricultural insurance portfolios focus on post harvest risks whereas the **revenues and investments of farmers are highly impacted by crop losses => INSURANCE GAP / OPPORTUNITIES**

⇒ Traditional Crop Insurance (Single or Multi Risks Insurance, Income Insurance, Farm Insurance, ...) is expensive to administrate and limited by Anti Selection and Moral Hazard effects => **Emergence of Index-Based Crop Insurance solutions**

INDEX INSURANCE BASICS

- Differs from traditional insurance with quotes and pays out in function of individual risk / direct relation
 - Insurance is linked to an index. **Indemnity on the basis of attaining a certain trigger** (level of reference) in the insured location/group:
 - Fixed capital, location and period insured
 - Automatically capture the risk insured thanks to defined **climatic** (wind, temperature, rainfall, hail, ...) or **yields parameters**
 - Fix triggers corresponding to decreases in yield. Can have multiple triggers and coverage periods
- => When triggers are reached, all insured producers are **automatically paid** without field inspection



- An inherent aspect is **basis risk** - the difference between real losses and those indicated by the index

INDEX INSURANCE ADVANTAGES

Advantages compared to traditional insurance

- Capacity to design specific products taking into account crop varieties, calendars, ...
- Lower administration costs and automatic claims payout
- Reduce moral hazard and anti-selection
- Improve access to international reinsurance capacities

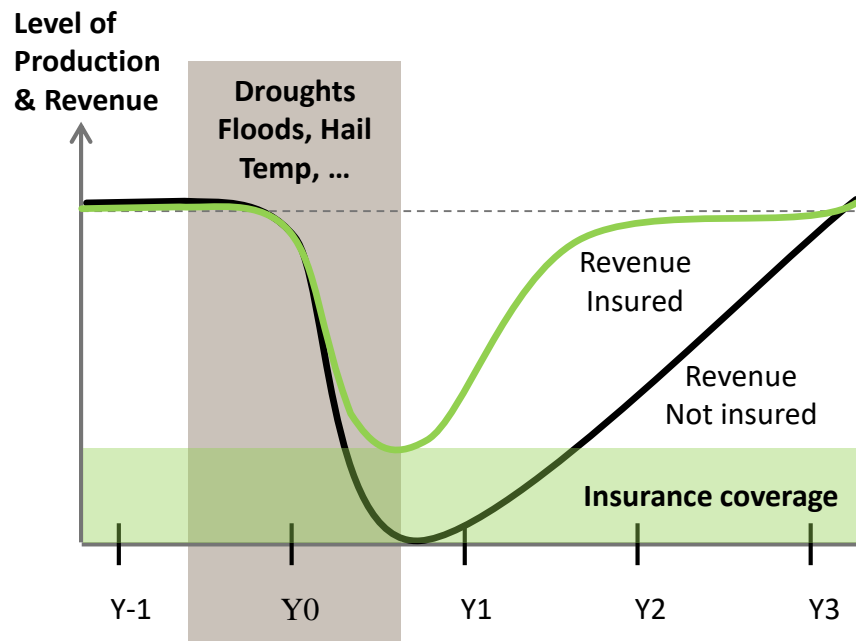
Advantages for farmers

- **Facilitates access to insurance and stabilises revenues of producers**
- **Improves agricultural practices by:**
 - Covering good crop practices
 - Favouring investment (purchase of quality inputs)
- Improves savings of producers
- Improves well-being of rural communities and encourages farmers' offspring to continue activity
- Lessens adverse shock of climate change
- Favours increase in rural lending
- Strengthens agricultural value chain



INDEX INSURANCE VALUE CHAIN APPROACH

Insurance mitigates the impact of shocks and secures future production...



... with benefits on the whole agriculture value chain

Farmers (and States)

Stabilized rural incomes

- Secured revenues
- Improved access to financing
- Possible Safety Nets Mechanisms for Improved food/social security

Banks & Financial Institutions

Reduced Risk in the Portfolio

- Reduced write-offs & recovery costs
- Extended lending business

Agric Businesses (seeds, fertilizers, ...)

Stabilized Demand/ Revenues

- Stabilized sales to farmers
- Hedged revenue decline
- Possible to grow customer base by offering insurance to farmers

Crop Dealers

Stabilized Supply / Costs

- Stabilized supply (decreased duration of downturn)
- Hedged costs of climate events
- Possible to grow customer base by offering insurance to farmers

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EXPERIENCE SHARING INNOVATIVE PRODUCTS

Rainfall Index : Agronomic approach based on crops water requirement

- Coverage : Drought / Excess of Water
- Data: Daily rainfall from weather stations. min 10_15 years reference database
- Resolution: +/- 5km adjustable according specificities of local climate (cf WMO)
- **Case Studies: Maize Insurance in Senegal**



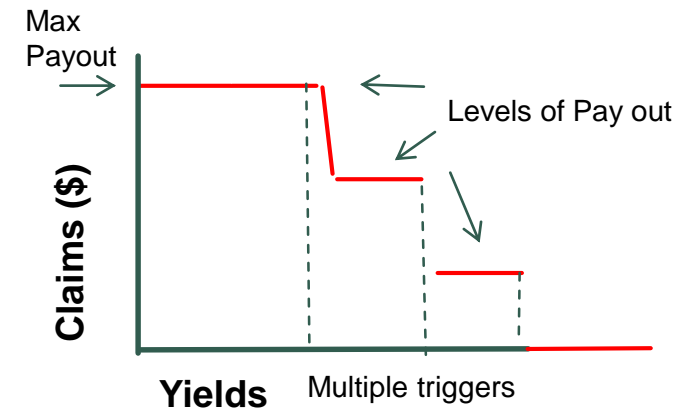
Satellite Index: Statistic approach based on relative values of index

- Type : Evapotranspiration (RE), Biomass (NDVI), Rainfall Estimate (RFE), ...
- Long timeseries: until 36 years reference database (METEOSAT)
- Resolution: between 3x3 km and 10x10 km according specificities index / satellites
- **Case Study: Cereals Insurance in Mali**

EXPERIENCE SHARING INNOVATIVE PRODUCTS

Average Yield Index : Statistic approach based on historical yields of the group insured

- Group policies, coverage is mandatory into the group
- Coverage: decrease in yields
- Data: Historical Yields. Min 5_7 years of data. Best > 10 years
- Pay out :
 - Pay out (1,2,3,...) if the average yield of the group is bellow triggers (1,2,3,...)
 - Possibility to introduce a second trigger on neighbourhood to reduce moral hazard
- **Case Studies: Cotton Insurance in Burkina-Faso**



Other examples of innovative index-based insurance products :

- Drought (or flood) coverage of rainfed crops: wheat, rice, peanuts, sorghum, millet, soya, ...
- Livestock Insurance
- Extreme temperature Insurance
- Hail Insurance
- Natural disasters: storm, hurricane, earthquake

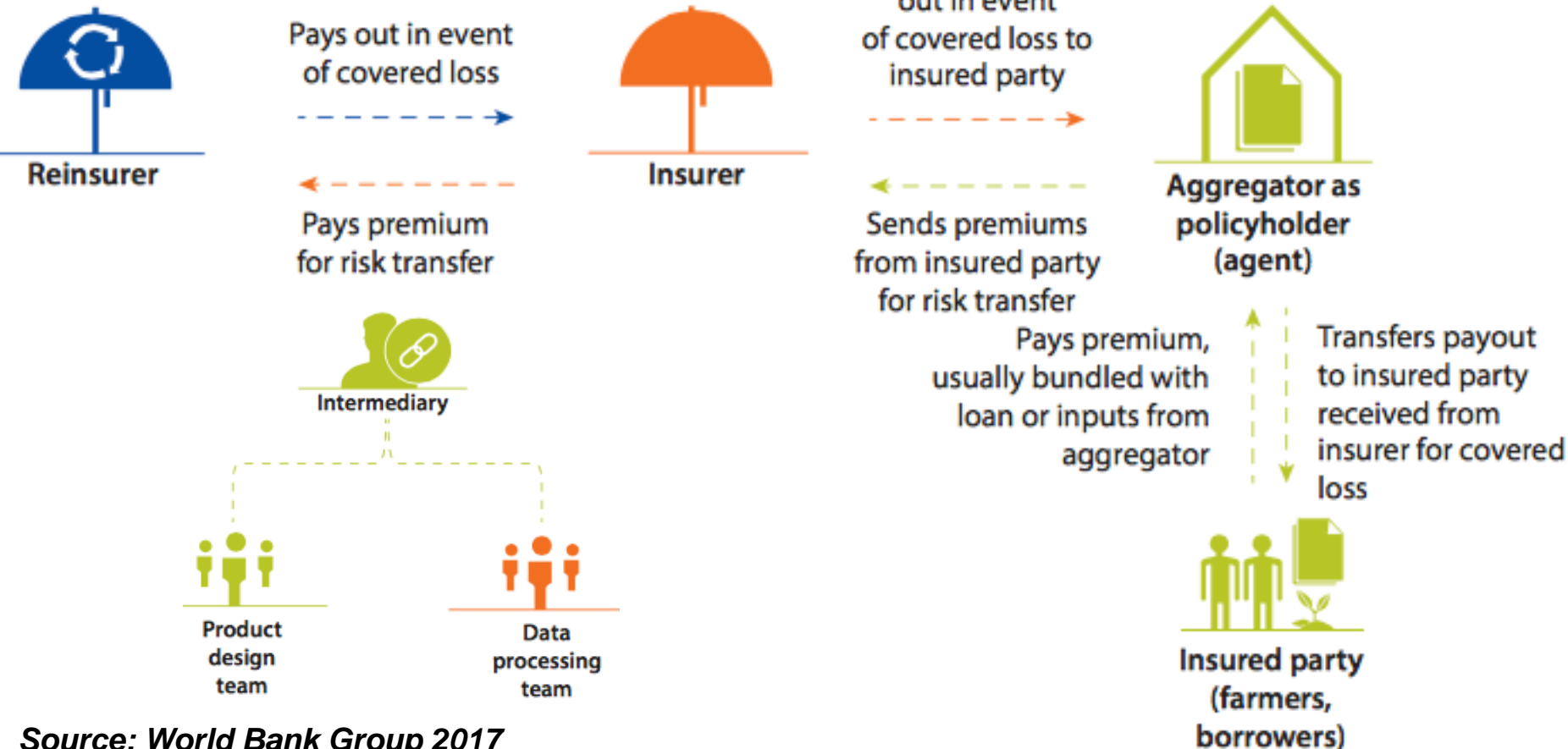
EXPERIENCE SHARING PRICING

- **Challenges met :**

- Pricing : availability and quality of data, length of database, pricing unit (village VS region)
- Net Premium (after reinsurance): adjusted burning cost (trend and tail value at risk), return on capital
- Gross Premium : own expenses and partner loadings +/- taxes and incentives
- ⇒ **Added value of the product depends on the equilibrium between level of coverage and level of premium**
- ⇒ **Multi-annual pricing could decrease constraints on distribution**

EXPERIENCE SHARING STAKEHOLDERS

Private Sector



Public Sector

Regulation

Research

Infrastructures &
Databases

Incentives

Financial education

Awareness Raising

EXPERIENCE SHARING

KEY SUCCESS FACTORS

- Respect of regulatory framework and collaboration with regulator (possible PPP), often 'sand-box regulatory environment' (test and learn)
- Products tailored to needs and elaborated in close collaboration with all stakeholders including end beneficiaries
- High added value products (tailored coverage, significant claims ratio, fast pay out, ...)
- Simplicity in implementation and management (especially claim management)
- Strong network of delivery channels
- Financial education, training and financial support (incentives, subsidies, ...)
- Transparency and communication

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CHALLENGES AND OPPORTUNITIES

MARKET EDUCATION AND INFORMATION

- Index-based insurance requires competence building with all stakeholders

Regulator / Insurers	Aggregators	Farming Organizations
<p>Basics on index insurance :</p> <ul style="list-style-type: none"> • Data linked to the contract • Contract design • Contract pricing • Designing insurance policy documents • Designing reinsurance term sheets and reinsurance contract • Contract monitoring • Claim processing 	<p>Basics of index insurance :</p> <ul style="list-style-type: none"> • Contract design processes • Designing client information sheets • Farmer orientation and training • Premium reporting • Contract monitoring- Mark to model. • Claim processing. • Managing insurance settlements in the loan settlement process 	<p>Basics of index insurance :</p> <ul style="list-style-type: none"> • Index insurance contract • Data linked to the contract • Index parameters being used as proxy for the loss • Length of different crop growth periods • Payment trigger points • Exit trigger points • Contract payout rate • Sum insured • Claim processing

- Marketing material must clearly explain : risk covered (and not covered), data used, premium cost, pay out calculation and frequency, basis risk, assistance and complaint contacts
- Index-monitoring: best to inform farmers on index values all along the coverage period. At least provide index-values with claims report

CHALLENGES AND OPPORTUNITIES

RURAL FINANCE

- **Linked insurance to credit** aims to facilitate agricultural lending for farmers by transferring some of the systemic risks. Possible at different levels:
 - Farmer buys individual insurance and uses it as collateral to secure a loan : voluntary insurance
 - Financial institution buys insurance on behalf of borrowers to cover their individual loans: compulsory insurance
 - Financial institution buys insurance to cover its own aggregate loan portfolio risk: meso level coverage⇒ Voluntary or compulsory ?
- **Linked insurance to savings** aims to secure the revenues and investment capacity of farmers. Insurance can be (partially) financed by the revenues of saving and increases autonomy and resilience of farmers
- **Impact Investors** (Insuresilience Insurance Fund, Oikocredit, Grameen Credit Agricole Foundation, Responsibility, Roots Capital, ...) and **Donors** (World Bank, USAID, KFW, ...) support Financial Institutions to develop agricultural insurance by providing **refinancing facilities, guaranties and TA programs**

CHALLENGES AND OPPORTUNITIES INNOVATIVE DISTRIBUTION MODELS

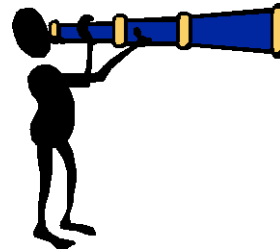
Bundle Insurance with inputs and services

- Seeds and/or fertilizers Insurance
- Packages

Seeds + Inputs + Credit
+ Insurance + Advice +
Access to market

Digital Insurance

- Mobile Insurance
- Multi Channel Insurance



Public Insurance

- State coverage
- Safety net mechanisms

Cross Selling

- Bundle agricultural insurance with other products (life, health, ...)



Thank you for your questions
and comments,

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