



**Paving the Way Forward for Rural Finance**  
*An International Conference on Best Practices*

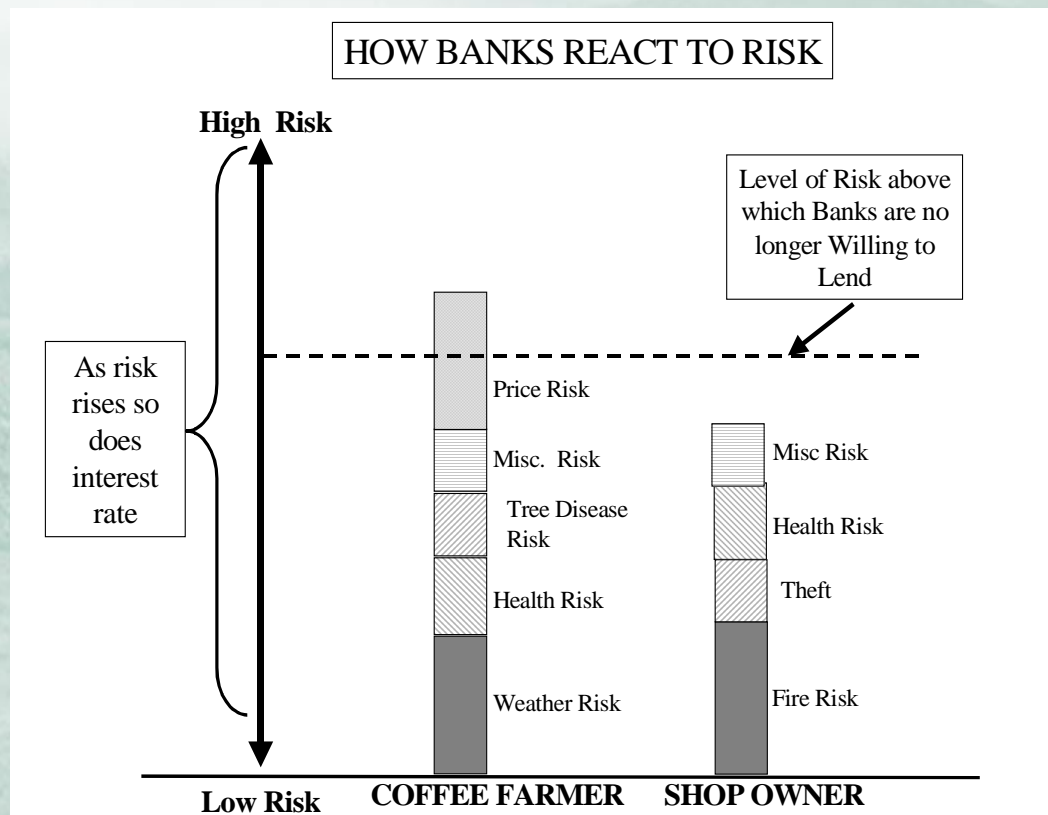
# **Innovative Approaches for Improving Access to Agricultural Lending: The Use of Price and Weather Risk Management Instruments**

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## THE IMPACT OF RISK

- Limits ability to plan
- Makes farmers “uncreditworthy”
- Inefficient coping mechanisms
- Non repayment of agricultural loans





## PRICE RISK MANAGEMENT INSTRUMENTS

- Previous schemes defied market forces & proved unsustainable
- New approach market based
- Floor to protect against price falls
- Short term coverage
- Intermediary necessary to aggregate farmers and meet contract size

Price Received Without Put Option



Price Received With Put Option





## **CASE STUDY: TANZANIA COFFEE**

### *Coffee Sector*

- 20% of export earnings
- Supports 400,000 low-income households
- Sector liberalized in 1993
- Producers are fully exposed to price movements

### *Producer Cooperative*

- Multiple payment system exposes coop to risk
  - 1st Payment established in advance
  - Prices fall below 1st payment = difficulty meeting obligations & repaying debts

**Therefore**, cooperative has difficulty maintaining lending from banks

**COOP BOUGHT PUT OPTIONS TO HEDGE RISK & CONTINUED MARKET ACTIVITY UNTIL END OF SELLING SEASON**



## OUTCOMES FOR COOP

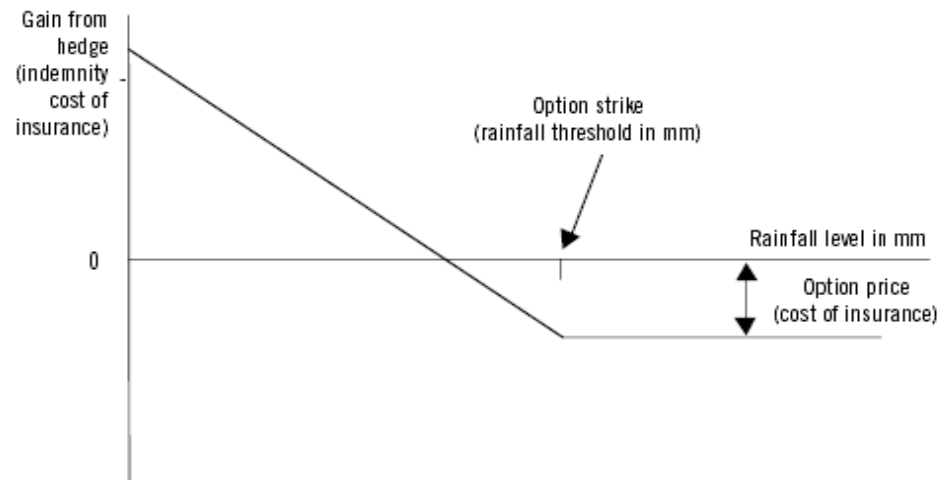
- Improved relationship w/ local bank
- Received loan to cover cost of hedging
- Improved overall financial state
- Better idea of financial status throughout the season
- Communicated results to local bank & govern
- Improved financial transparency
- Made more strategic selling decisions
- Dispersed revenue when earned (2nd and 3rd payments)



## INDEX BASED WEATHER INSURANCE

- Traditional crop insurance suffers from:
  - high administrative costs -- moral hazard -- adverse selection
- Compares a measurable, objective, correlated risk to yield
- Rainfall index designed w/ historical weather data
- IF, rainfall levels drops below threshold, THEN, insurance pays out
- Designed like a put option
- Farmers elect trigger level & scope of coverage
- Setup on a proportional basis

### 1. Payoff structure for European put option on rainfall





## CASE STUDY: MOROCCAN GRAINS

### *Morocco*

- 17% GDP from agriculture
- Poor are primarily in rural areas
- 70% of agriculture land in cereal
- 50% of cereal grown in unfavorable areas
- 90% of agriculture non- irrigated
- Drought biggest determinant in crop failure

### *Drought*

- Government bails out drought
- Problems w/ traditional crop insurance
- Need to reduce exposure of state agricultural bank (CNCA)
- 80 agriculture & 11% all loans CNCA
- Drought insurance mandatory for lending



## **CASE STUDY: MOROCCAN GRAINS**

- Joint weather insurance project (IFC, CNCA, MAMDA)
- Meknes region
- 5000 hectares of cereal
- Strong correlation between rainfall and yield
- Index designed based on National Meteorological Society info
- Coverage up to 80% of the long-term mean
- Linked to crop loans from the CNCA



## OTHER INNOVATIONS

- “Liquid” collaterals can improve “creditworthiness” of agricultural producers
- Warehouse receipts
  - Mexican Reportos
    - Sugar placed in certified warehouse
    - Bank takes ownership
    - Value of sugar is marked to the market
- Combining instruments gives a more comprehensive guarantee