

An Introduction to Index Insurance

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Formal Financial Institutions and Lower Income Countries

- Formal insurance, savings, and lending opportunities are often missing or rationed for the rural poor.
 - Poor contract enforcement.
 - Asymmetric information.
 - High transaction costs.
 - High exposure to spatially covariate risks.

Informal Risk-Coping Strategies

- Structural mitigation.
- Diversification.
- Share tenancy.
- Producing lower risk outputs.
- Family and community mutual aid obligations.
- Informal lenders.

Limitations of Informal Risk-Coping Strategies

- Implied risk premium can be very high.
- May not be available to all households.
- Also tend to break down when covariate shocks occur.

Index Insurance

- Indemnities based not on actual loss incurred but rather on realizations of an index that is correlated with actual losses.
- Index is generally:
 - An aggregate measure of loss (e.g., area yields); or
 - A proxy for loss (e.g., weather variable).
- Data supporting the index must be secure, reliable, transparent, and objective.

Example of Index Insurance

- Policy protects against insufficient rainfall measured at specific weather station over a three month period.
 - Threshold = 100 mm
 - Limit = 50 mm
 - Liability = \$1,000 so tick-size is \$20 per mm
- If realized rainfall = 60 mm, indemnity = \$800
- If realized rainfall = 40 mm, indemnity = \$1,000

Advantages of Index Insurance

- Policy is relatively straightforward.
- No need to estimate actual loss experienced by policyholder.
- No need to classify policyholders' risk exposure.
- Little potential for adverse selection or moral hazard problems.
- Operating costs are low compared to traditional insurance products.
- Can be sold by insurance companies that have very little agricultural expertise.

Disadvantages of Index Insurance

- Basis risk: The policyholder may experience a loss but yet receive no indemnity.
 - Loss caused by different peril.
 - Loss was localized so it is not reflected in the index.
- High start-up costs (data collection, agro-meteorological expertise, product design, etc.).