

# Optimal Packages: A review of impact assessment approaches of bundled insurance, credit and inputs

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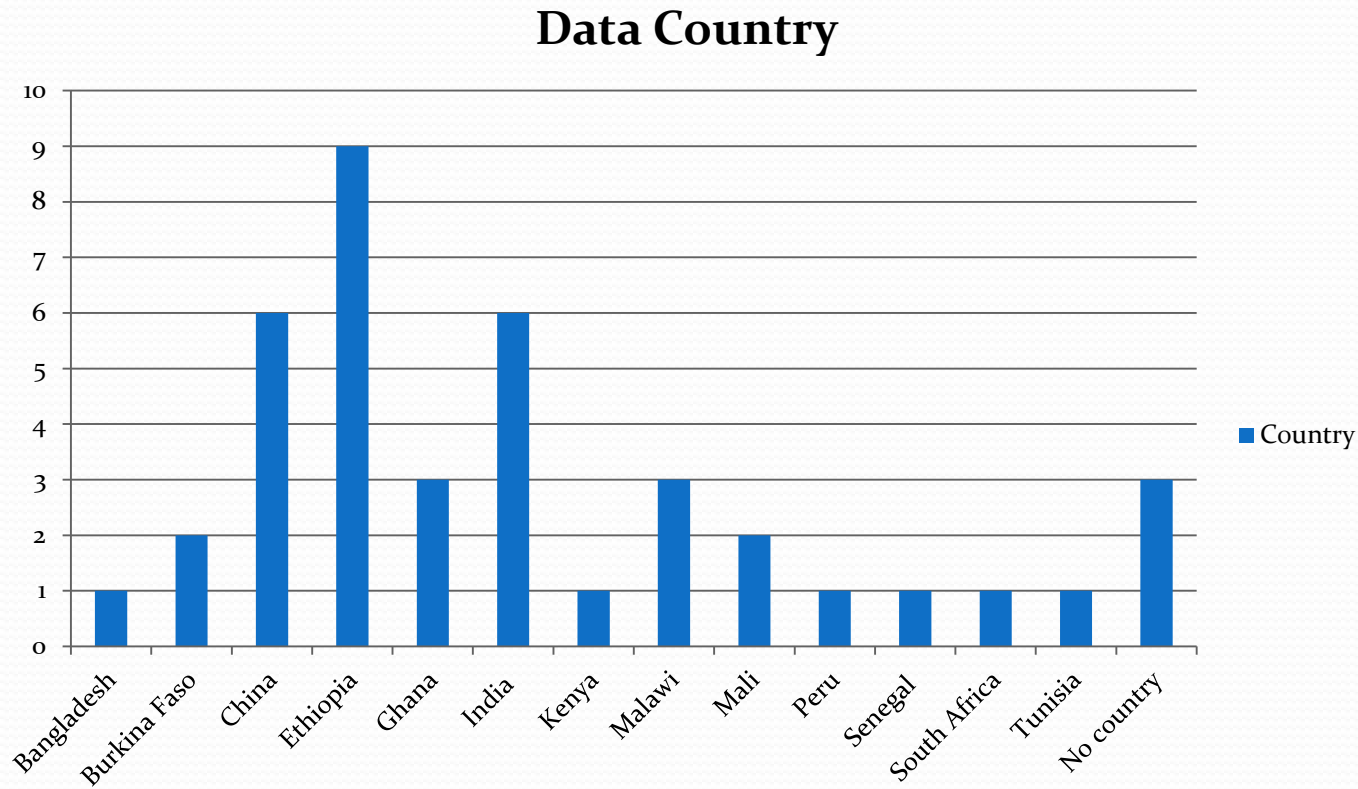
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# The extent of data under analysis

- The analysis covers studies undertaken and published during the period between 2007 and 2015.
- During this timeframe, the majority of studies have been implemented in Ethiopia, China and India, followed by Ghana, Malawi, Burkina Faso and Mali, among other countries.
- Just one published study in each country presents research conducted in Bangladesh, Kenya, Peru, Senegal, South Africa, Tunisia, respectively.

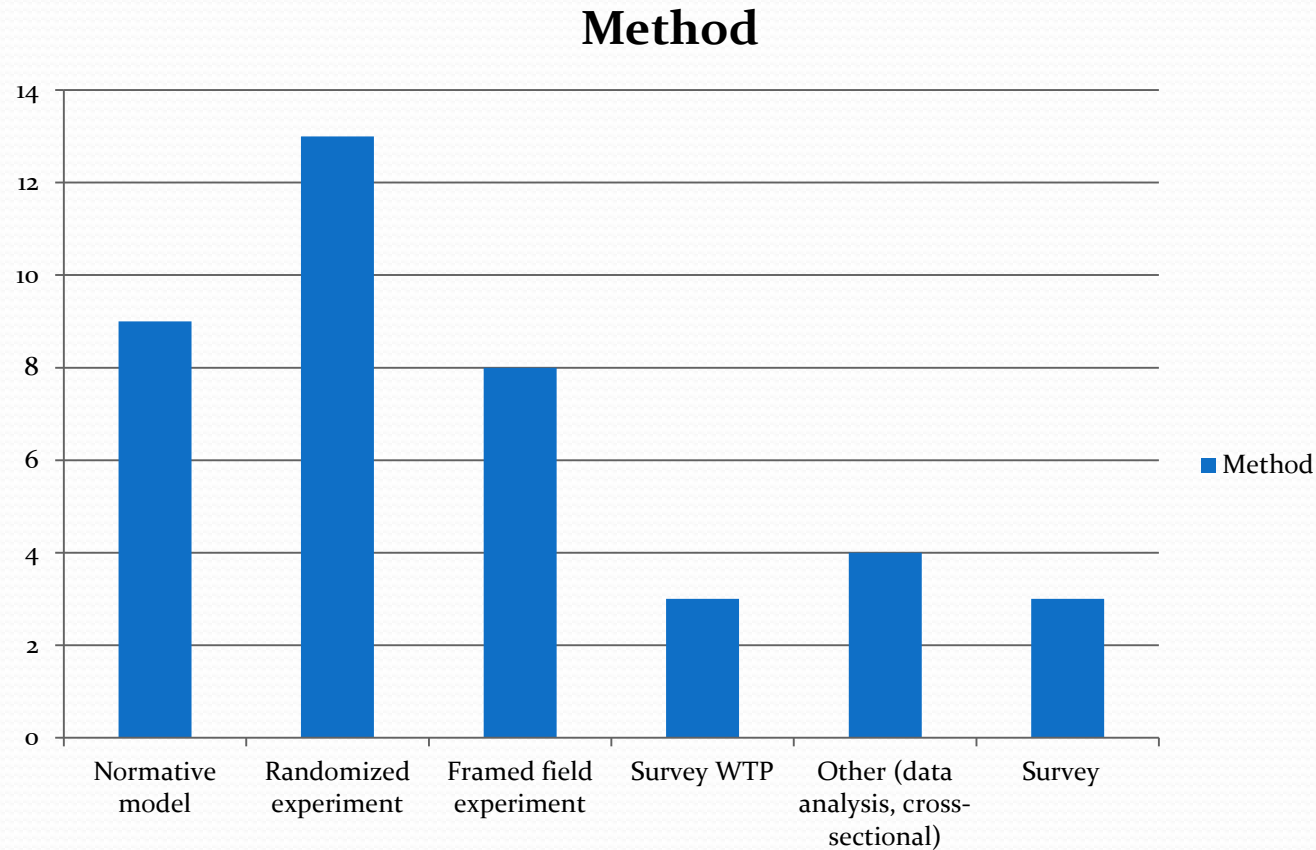
# The extent of data under analysis



# Types of methods and products employed

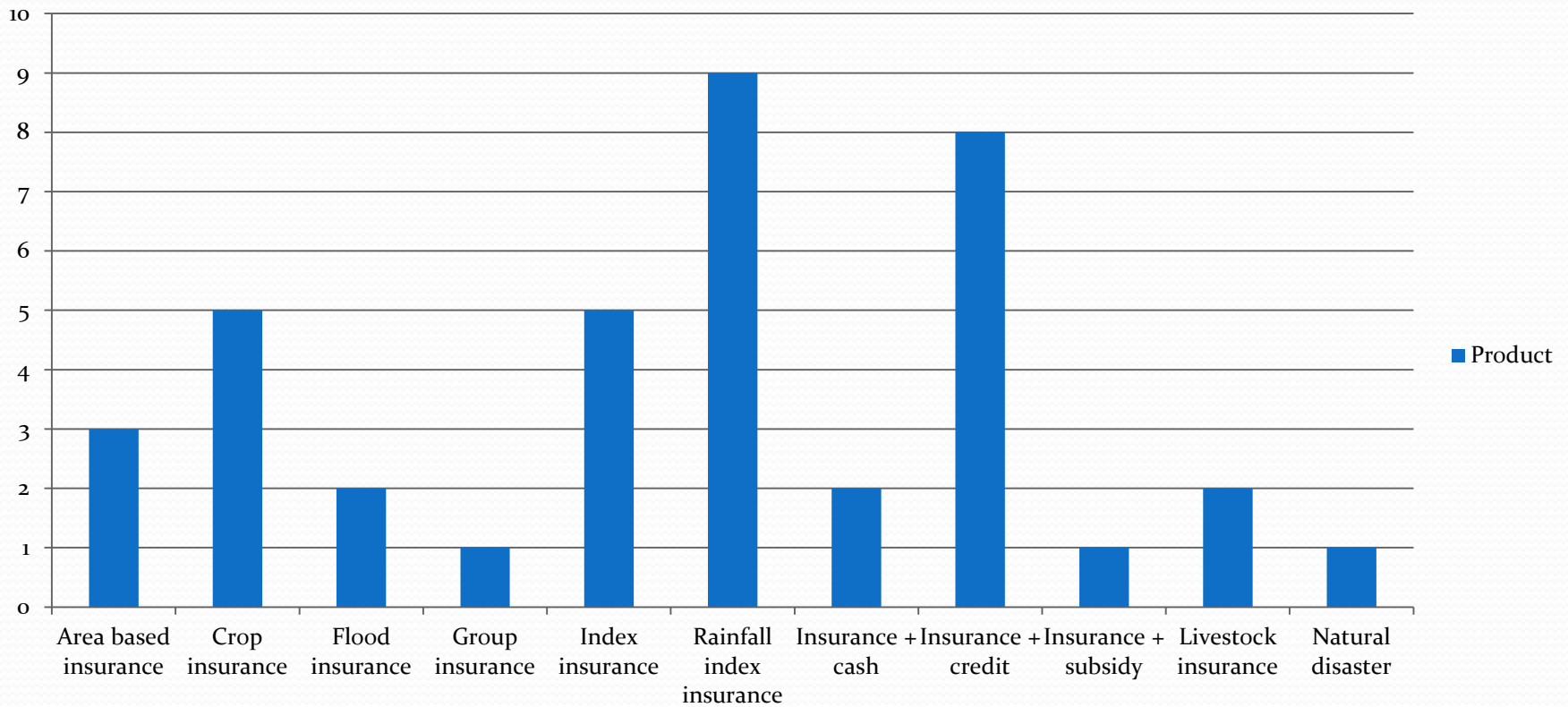
- The methods employed include:
  - Normative model
  - Randomised experiment
  - Framed field experiment
  - Willingness to Pay (WTP) survey
  - Surveys
- Products include:
  - Area-based insurance
  - Crop/flood/group/livestock/index insurance
  - Bundled products: insurance+credit+subsidy+cash.

# Types of methods employed

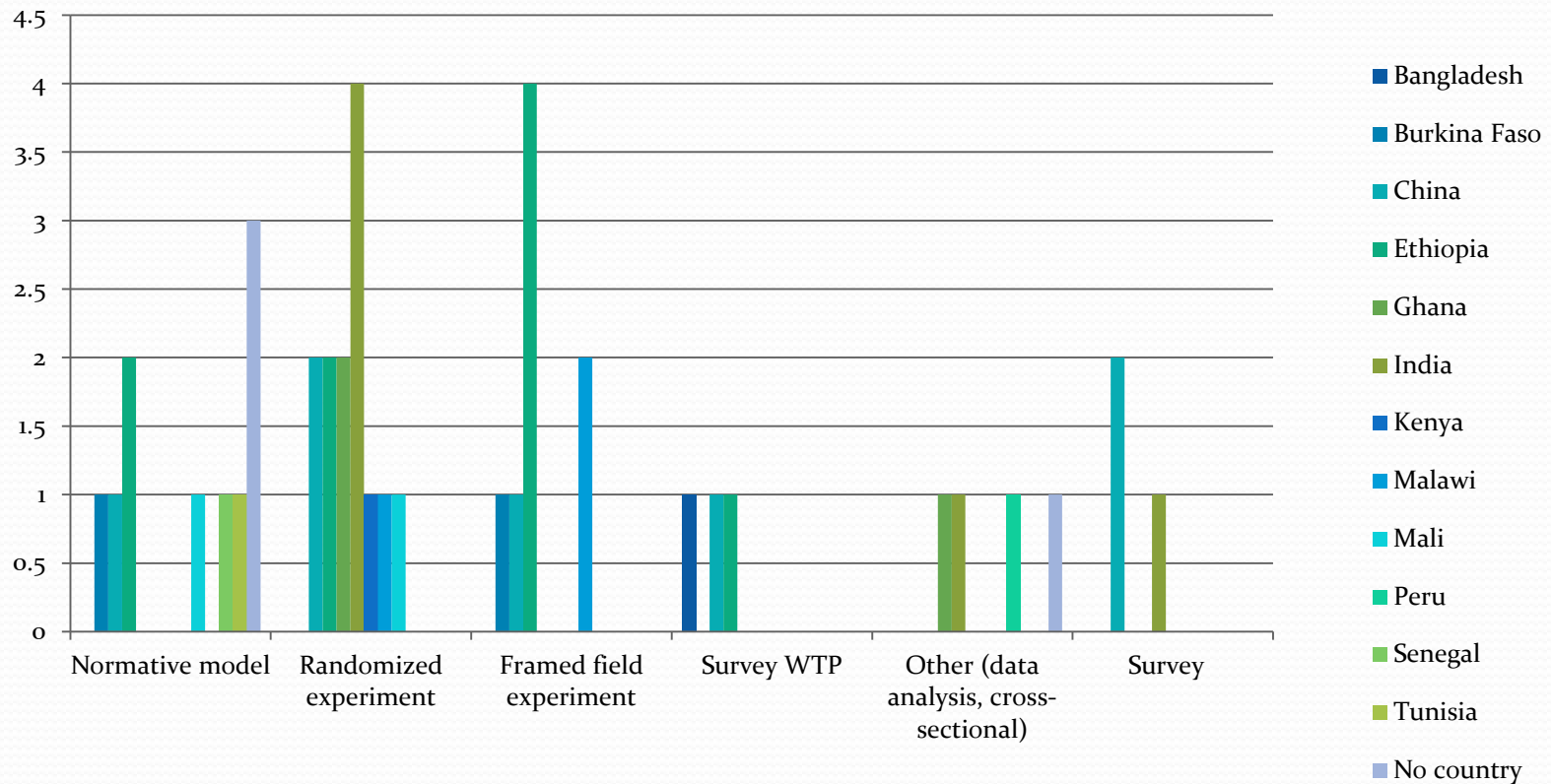


# Types of product employed

Product

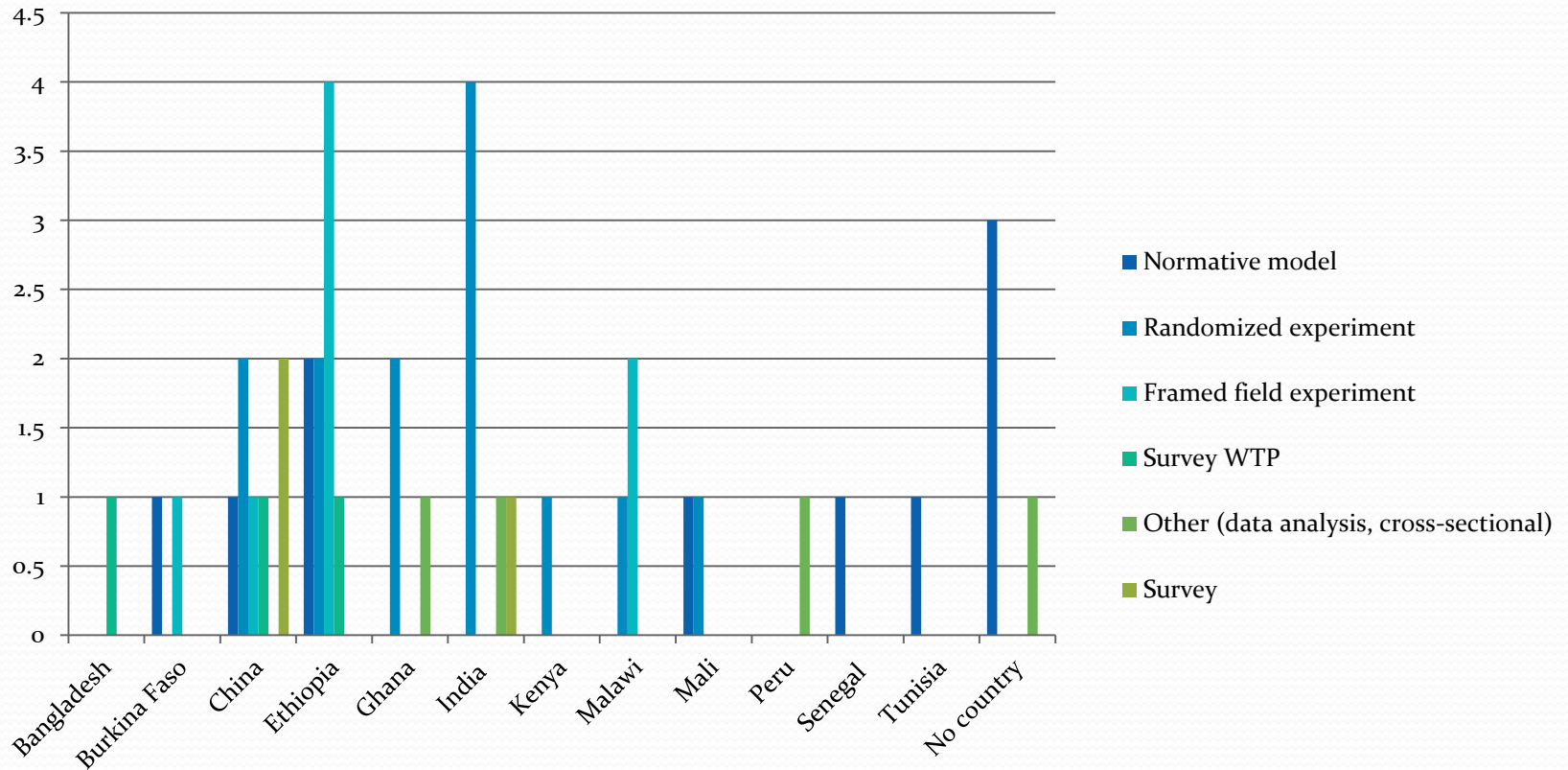


# Frequency of methods used by country





# Frequency of methods used by country



# Determinants of demand for products (1)

## *Wealth*

Wealth ++ (maybe demand is inverse U-shaped in relation to wealth?)

Income +

Increase in low-state income +

Land owned -

Asset endowment +

Amount of livestock +

Non-livestock assets +

## *Insurance product*

Discount +

Price o-

Premium loads -

Basis risk --

## *Financial services*

Credit access ++

Remittances +-

Savings +

Loan +o

Informal debt +o

Informal insurance +o

Default option +

## *Sources of income*

Other sources of income --

Other coping mechanisms -

Full time farmers +

## *Production risk*

Potential crop damage +

Production reductions due to weather +

River distance -

Occurrence of natural disasters -

Farmers with moisture stress +

Risk rationing +

Risk +-

Production security +

Coefficient of variation +

Vaccinations +-

Sanitation cost +

Irrigation o

Drought previous year -

Crop loss previous year -

## *Use of inputs*

Farmed area +-

Large production +

Use of fertilizer +

Use of agrofilm +

Use of pesticide -

Marginal production of inputs -

# Determinants of demand for products (2)

## *Understanding of financial products*

Information about working and benefits +  
Diffusion of knowledge +  
Behaviour of others o  
Familiarity ++  
Education ++  
Intensive education +  
Uncertainty about the product -  
Literacy ++  
Understanding +  
Simulation game ?  
Training +  
Money back in case of no pay out +  
Village pay-out in previous year +  
Number of households in village who received a pay-out in previous year +  
General interest o  
Experiencing a pay-out oneself +

## *Risk attitude*

Risk aversion - -  
Risk-moderate +  
Risk attitude o  
Worry about risk +

## *Personal characteristics*

Receipt of disaster assistant o  
Occupation=farmer ++  
Employment +  
Farm experience + -  
Gender=male ++  
Household head +  
Trust in formal financial system +  
Age + -  
Time preference -  
Believes others to be honest +  
Cash crop farmers compared to livestock farmers +

## *Network*

Member of local council +  
Official position +  
Parents hold official position -  
Connections to other villages +

## *Marketing techniques*

Household visited by endorser +  
High reward +  
Emphasizing groups or communal nature +

# Impact assessment of insurance products (1)

- Normative model
- *Impact of insurance*
- Consumption +
- Risky investment +
- Riskless investment -
- Area planted +
- Number of farmers +
- Risk/credit rationing -
- *Comparison to other financial products*
- Larger impact on welfare than savings or credit, but this is sensitive to pricing (loading) and basis risk.
- Interlinked contract always dominates either credit or insurance.
- *Default rates*
- Default rates are larger under independent offering of credit and insurance, than credit-linked contract, than contingent credit. Technology uptake is the highest among independent offering.
- With subsidized insurance default rates are lower. Unsubsidized insurance reduces and destabilizes bank equity growth, but insurance purchased by the bank increases and stabilizes equity growth.
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- Randomized experiment
- *Impact of insurance*
- Production ++
- Reduction in consumption for asset poor HHs -
- Reduction in selling assets for asset poor HHs -
- Risky investment +o
- Feeling insured +

# Impact assessment of insurance products (2)

- *Other findings*
- The efficiency of delivery needs to be increased if insurance needs to become more widespread.
- Even landless labourers can benefit from insurance.
- Complementary to informal risk sharing
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- Framed field experiment
- *Comparison*
- Index insurance is preferred over savings and immediate payouts
- High frequency payouts are preferred over low frequency payouts
- *Other findings*
- Cash payments are less costly than index insurance. Basis risk leads to low demand which can only be overcome with subsidies.
- 29% of the subject demonstrates discontinuous preferences and is willing to pay more for an insurance contract with an uncertain premium.
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- Survey
- *Impact of insurance*
- Expenditures on pesticides (risk-reducing input) –
- Expenditures on fertilizer and agro-film (risk-increasing input) +
- 
- Other
- *Impact of insurance*
- Little evidence for actual risk reduction.

# Impact assessment of bundled products: Insurance Plus Credit (1)

- Normative model
- *Insurance > Credit*
- Credit diverters choose to invest more credit in production when index insurance becomes available.
- Credit decreases precautionary savings, even more so with insured credit
- Index insurance helps to reduce risk rationing and hence credit rationing.
- With both credit and insurance, default rates are higher than with credit only.
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- Randomised experiment
- *Credit > Insurance*
- Liquidity constraints might hamper insurance purchase.
- Credit and liquidity are unrelated to insurance purchase.
- *Insurance > Credit*
- Little evidence for risk rationing is found.
- Demand for insured credit is lower than for credit only, which is mainly caused the limited liability clause in the loan contract.
- Weather index insurance is a means to expand agricultural credit as credit constraints are significant.

# Impact assessment of bundled products:

## Insurance Plus Credit (2)

- Framed field experiment
- *Credit > Insurance*
- Risk is the primary reason for lower adoption of modern inputs, not credit (?)
- Access to credit is related negatively to indemnity insurance and positively related to individual index insurance.
- Cash and liquidity constraints may limit farmer's willingness to use crop insurance as a risk management tool.
- *Insurance > Credit*
- Credit diverters choose to invest more credit in production when index insurance is available.
- Both stated and revealed preferences for insured loans over uninsured loans.
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- Survey
- Access to credit and insurance are highly correlated.
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- Survey WTP
- *Credit > Insurance*
- Access to microcredit leads to larger uptake, but lower WTP. Credit costs less than insurance.
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- Other
- *Credit > Insurance*
- Insurance, savings and credit are complementary.
- Credit rationing leads to lower insurance purchase.
- *Insurance > Credit*
- Insurance protects against covariate risk and can hence increase the amount of credit available.

# Conclusions

- The determinants of *demand for* insurance are mainly established by use of randomised experiments and surveys – as opposed to via other research methods.
- Empirical evidence on the *impact* of insurance is still very limited. However, the effect of insurance is generally positive. Index-based insurance, in particular, seems to be preferred over savings or credit, yet this finding hinges upon sufficiently low basis risk and loading costs, and hence subsidies.
- The effect of credit on insurance is still ambiguous. Also, the effect of insurance on credit is contested. Insurance could unlock credit and lead to larger investments, but it could also lead to undesired side effects such as higher default rates.





THANK YOU

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