



Optimal packaging of insurance and credit for smallholder farmers in Africa

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Outline

- Objectives and methods
- Research questions
- Preliminary findings
- Work ahead

The Project

- Help lift constraints to increase agricultural productivity of smallholders in Africa
 - Limited investments in quality inputs
 - Credit constraints
 - Risk and ambiguity aversion
 - Market access and technical knowledge
 - Assess the value addition of insurance
 - Index and indemnity based
- PI: Prof Ana Marr, Natural Resources Institute, University of Greenwich, United Kingdom
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Project website: <http://agricreditplus.nri.org/>

Kenya (Meru)

- Shalem Investments
 - Provide quality seeds and inputs
 - Agronomist visits farmers throughout year
 - Offer to buy produce at fixed pre-agreed price
 - Experimented with access to credit and insurance
- APA: free crop insurance if buying quality seeds
 - Indemnity based (up to 2/3 of estimated costs)
 - More quality seeds = more insured land
 - 40% get it before deciding, 24% after (surprise)

Research Questions

- Does the presence of a free insurance conditional on the purchase of quality seeds:
 - increase the purchase of such conditional inputs?
 - increase purchase of other unconditional inputs? (i.e. fertilizer, pesticides, etc.)
 - change production decisions of insured farmers?
 - increase income and resilience of insured farmers?
 - reduce the prevalence of side-selling?

Progress

- Targeted 974 farmers:
 - Randomly, 40% offered crop insurance (390)
 - Prior to ordering of quality seeds (May)
 - Enough time to reflect/change + training on insurance
 - Remaining 60%, surprise lottery
 - After ordering quality seeds (September)
 - 40% of those who ordered anyway get insured
 - No time to reflect/change + training on insurance
- All not insured farmers can buy at market price

The Insurance

Per packet:	Number of acres	Insurance activation limit	Maximum payout (KSH)
Sorghum	0.5	6.5	3737.5
Maize	0.25	2.5	2356.25
Soya	0.1	1.15	735.5
Sunflower	0.5	5.5	1592.5

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Insurance:	Packets purchased	Acres farmed	Insurance activation limit	Maximum payout
Sorghum	2	1	13	7475
Maize	8	2	20	18850
Soya	-			
Sunflower	-			

CALL WITHIN

24

HOURS



GENERAL • LIFE • HEALTH

CALL WITHIN

24

HOURS

THE INSURANCE COVERS:

1. Drought
2. Uncontrollable pests and diseases
 - EXCLUDING quelea birds damage
 - INCLUDING elephant damage but ONLY if farm does not encroach forest
3. Hailstone damage
4. Flooding of the crop field
5. Fire and lightning
 - EXCLUDING arson and negligence
6. Windstorm
7. Excessive rainfall

IN CASE OF DAMAGE:

1. CALL SHALEM
Agent: 07 961 83929
2. EXPLAIN DAMAGE TO AGENT
3. CALL INSURANCE
Agent: 07 353 29958
Head office: 020 286 2166
4. EXPLAIN DAMAGE TO AGENT
5. ARRANGE INSPECTION
6. MEET CLAIMS OFFICER

Preliminary Findings

- 390 won lottery in May
 - 274 bought seeds and thus got insured (A)
 - B: 116 did not buy seeds, not insured (B)
- 584 did not win the lottery in May
 - 187 bought seeds anyway
 - 79 won surprise lottery and thus got insured (C)
 - 108 lost surprise lottery, not insured (D)
 - 397 did not buy seeds, not insured (E)
- Some figures based on booking, may be revised

Preliminary Findings

- Insurance increased the prevalence of quality seeds purchase from 32% to 70% of farmers
 - Implicit “value” of insurance
 - Karlan et al. 2014, QJE
- How many packets per farmer? Other inputs?
 - Farm Accounting and Records Book
 - Emerick et al. 2016, AER
- Which crops are farmed? In what proportions?
 - Share of risky vs. hedging crops

Impact?

- Two potential effects of indemnity insurance:
 - 1) Farmers go for more risky/more profitable crops
 - More income, less variability
 - 2) Farmers may engage in moral hazard
 - Ex-ante: slacking on labour, unconditional inputs
 - Ex-post: income hiding, side-selling
- Compare A+B to D+E (LATE), but also D+E to C
 - The latter could not change production decisions
 - If difference, due to moral hazard
 - Net out income and resilience effects

Next Steps

- Partial subsidisation
 - Willingness to pay?
 - Becker–DeGroot–Marschak (BDM) method
 - Optimal subsidy (demand curve)
 - Cost-effectiveness for input dealer
- Complementarity of credit

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