



Searching for A New Ending to the Same Old Story about Risk: A Pilot Project & Research Agenda

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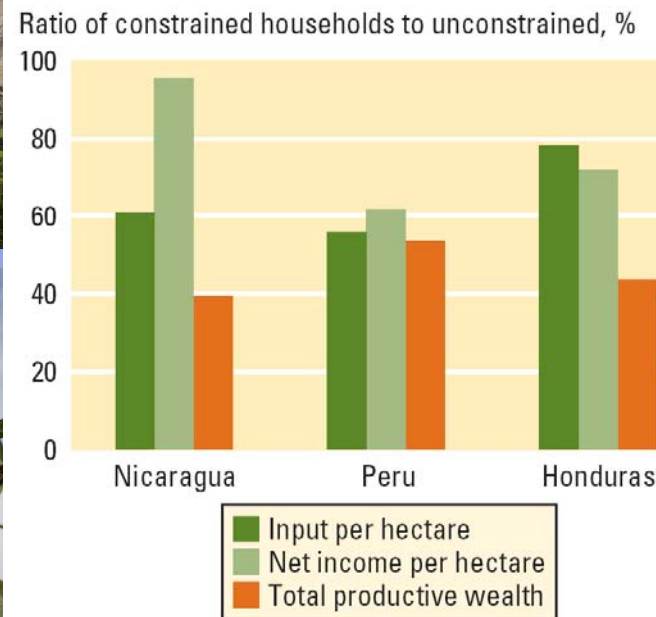
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Index Insurance
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Missing or Imperfect Financial Markets Can Make People Poor

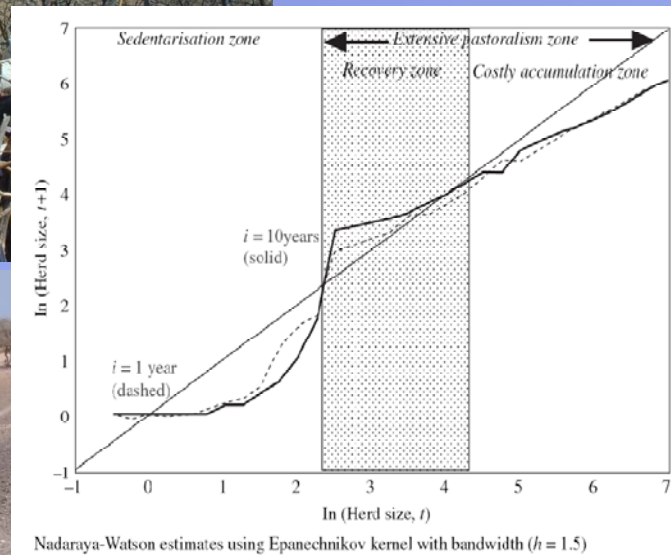
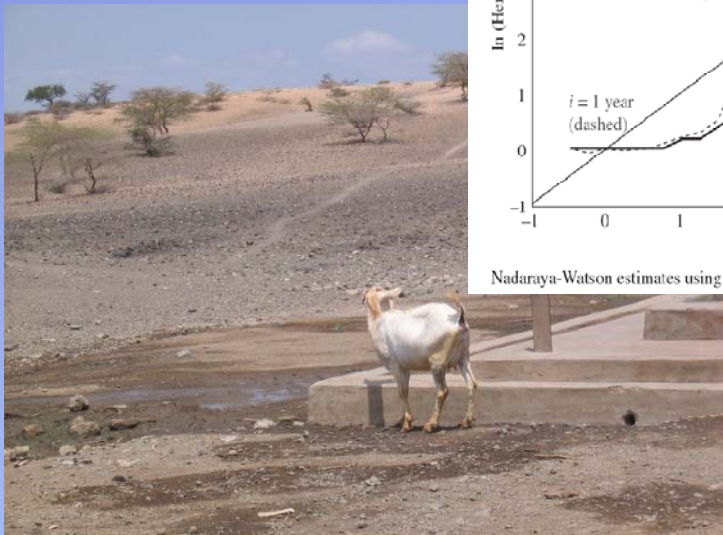
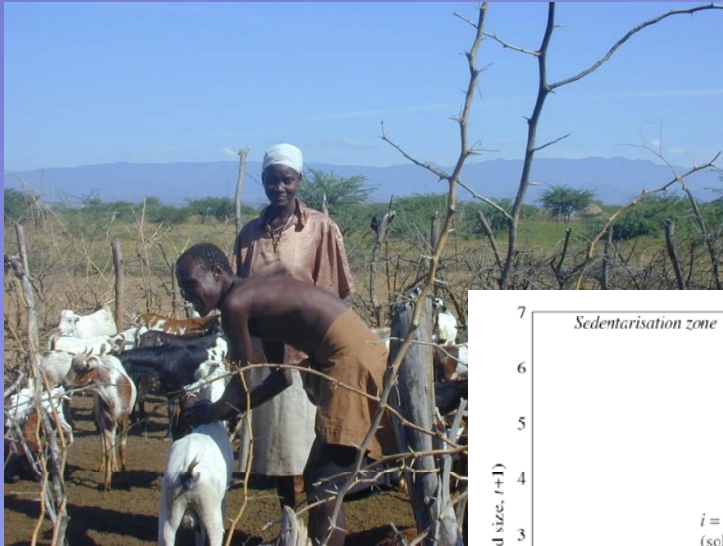


Figure 6.1 Credit-constrained rural households use fewer inputs and have lower incomes



- Peruvian coastal agriculture is a commercially-oriented, high potential area
- Dominated by small holders (land reform beneficiaries)
- Yet a recent study suggests that financial market constraints may reduce production by 25%

Missing Financial Markets Can Keep People Poor



- Research identifies a poverty trap in the arid pastoral areas of Northern Kenya
- Households whose assets fall below a critical threshold are unable to recover nor craft a pathway from poverty
- Driven by financial market constraints, this dynamic over time can create ever growing numbers of food aid dependent people

The Agenda

- Generations of evidence that risk is large & costly
- Implementable insurance contracts hold out tremendous promise of reducing those costs
- Technical challenges are large, leading perhaps unavoidably to a first generation supply-centric projects
- Challenge is now to
 - Build on the technical learning that has taken place
 - Relink with the development problems that make risk so important
 - Find ways to enhance expected development impact and in so doing enhance uptake
 - Monitor those impacts

The IBLI Project in Northern Kenya

- Intuition & initial analysis
 - Can we do better than food aid & cash transfers?
 - Expected effects
 - Ex post: brake slide into infeasible positions
 - Ex ante: open pathways from poverty
 - Induce financial deepening
 - Analytical results
- Technical challenges & crafting a demand-centric design
 - Index signal
 - Intelligent design
- Implementation Challenges
 - Contract details
 - Understanding
 - Reinsurance and competitive pricing
- Research Design

Hypothesized IBLI Impacts after a Drought Occurs *(safety net features)*

- Brake the growth of extreme poverty
 - Keep households economically viable by holding livestock above threshold (as in simulation game)
 - Avoid upward creep in indigence rate & food aid dependence
- Less destructive coping behavior, especially by those in the vicinity of the critical livestock threshold
 - Coping with shocks in vicinity of thresholds
 - Irreversible consequences & long run costs of this coping behavior
 - Why IBLI should reduce destructive coping

Hypothesized IBLI Impacts in Normal Years (making the safety net productive)

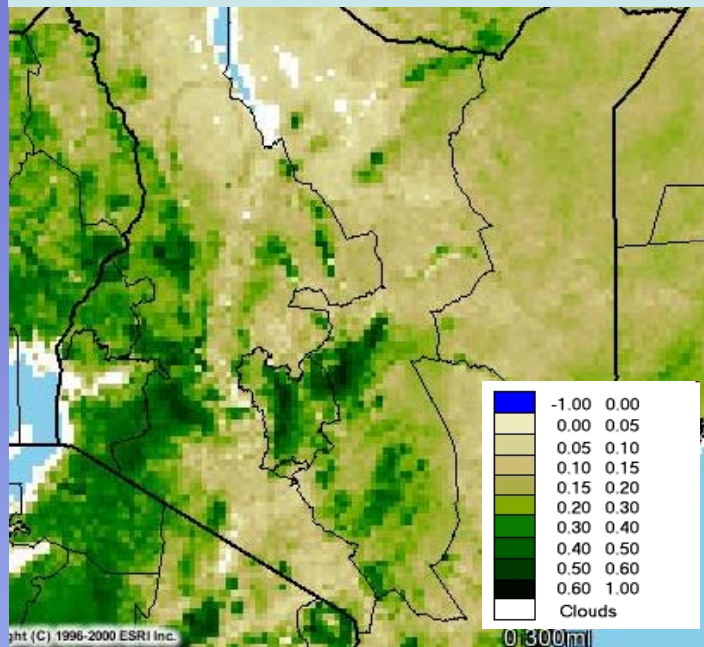
- Crowd-in productive savings & investment
 - IBLI enhances investment incentives
 - Enables entrepreneurial risk-taking
 - Reduces critical minimum livestock threshold

- Financial market deepening
 - Correlated risks destroy rural financial development
 - IBLI's removal of that risk should make more projects bankable
 - Support various efforts to catalyze local markets & opportunities
 - Capitalize livestock marketing cooperatives
 - Value added processing
 - Make credit available for managing individual shocks

Remotely Sensed Vegetation Index (NDVI)



NDVI February 2009, Dekad 3



1. Reliable and cheaply available

- Real-time available in 8×8 km² resolu.

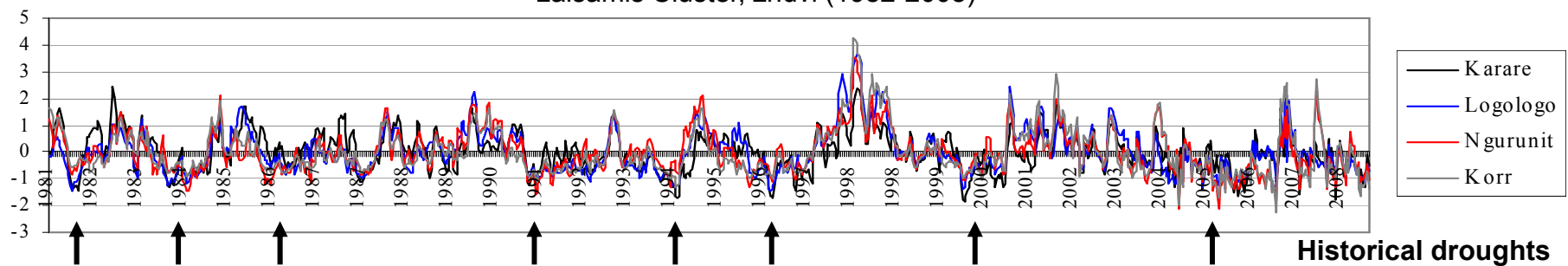
2. Spatially and temporally available

- 27 years available since late 1981

3. Highly correlated with herd mortality

- Focus on cumulative deviations of NDVI from normal

Laisamis Cluster, zndvi (1982-2008)



Transforming Signal into Insurance Index

1. Construct NDVI regressors: >>

- Standardize NDVI: $zndvi$
(focus on deviation from L-T mean to control for geographical differences)
- Construct cumulative $zndvi$: $Czndvi$ starting from 1 preceding season
(control for temporal effects)

2. Regime switching model with $Czndvi_pos = 0$ as a regime threshold

$$M_{1ls} = M_1(X(ndvi_{1ls})) + \varepsilon_{1ls} \quad \text{if } Czndvi_pos_{ls} \geq 0 \quad (\text{good climate regime})$$

$$M_{2ls} = M_2(X(ndvi_{2ls})) + \varepsilon_{2ls} \quad \text{if } Czndvi_pos_{ls} < 0 \quad (\text{bad climate regime})$$

3. Estimation Results

- Models explains area average mortality well especially in bad regime >>>

Obligation to Learn

- All of these suggest gains for the poor and vulnerable
 - Groups that are hard to reach
 - Break intergenerational transmission of poverty
- Obligation of research community to speak to policy & programming community on these issues:
 - Does IBLI reach its hypothesized effects?
 - How large are these impacts over time?
 - Is it time to invest in altering destructive poverty dynamics rather than simply treating the casualties?

Impact Evaluation Strategy

- Standard randomized treatment & control groups

	Control Without IBLI	Treatment With IBLI
	Group 1	Group 2

- Track key outcome indicators for both groups over time:
 - Child health & education
 - Community poverty rates
 - Income growth and asset accumulation
 - Financial market development
 - Range health
- However, dual barriers to this approach
 - Ethical concerns
 - Maintain IBLI commercial viability

Encouragement Design

- Alternatively achieve (partially) randomized treatment with randomly distributed ‘encouragement’
 - Selected communities as game sites (encourage with information)
 - Selected individuals receive multi-year insurance discount coupons
 - Side benefit of learning how much subsidy might be needed to encourage different uptake by different types of households (cost effective smart subsidies)

	Without IBLI (not encouraged)	With IBLI (encouraged)
	Group 1	Group 2

- Track key individual and community indicators

Additional Learning Opportunity

- Rollout of HSNP cash transfer program allows further opportunity to learn about program impacts

	Without IBLI	With IBLI
Without HSNP Cash Transfers (until 2011)	Group 1	Group 2
With HSNP Cash Transfers (by 2009)	Group 3	Group 4

- Key comparisons to be made:
 - Group 2 versus Group 3
 - Group 4 synergistic impacts
 - Requires coordination with HSNP impact evaluation team

