

Cotton Insurance in Mali and Burkina Faso

Impacts & Scaling-up

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Why Agricultural Insurance is Important

- We study agricultural insurance because there are decades of evidence that risk:
 - *Makes people poor* by reducing incomes & destroying assets & creditworthiness
 - *Keeps farmers from advancing*, by discouraging investment in risky but profitable activities
- Our hypothesis is that risk reduction through insurance should reverse this situation
 - By protecting households against the worst consequences of drought, insurance should in principal allow households to prudentially invest more in risky, but high returning agricultural activities.
 - That is, if insurance protects farmers assets & capital after the drought, it should also enable farmers to safely invest more before the drought (the “risk reduction dividend”)

- The organization of the cotton value chain in Burkina & Mali
- Designing a high quality, 2-trigger area yield contract to manage basis risk
- Scientific evidence on the impact of cotton insurance
- Current Nationwide scaling-up of the insurance in Burkina

Cotton Production in Burkina Faso & Mali

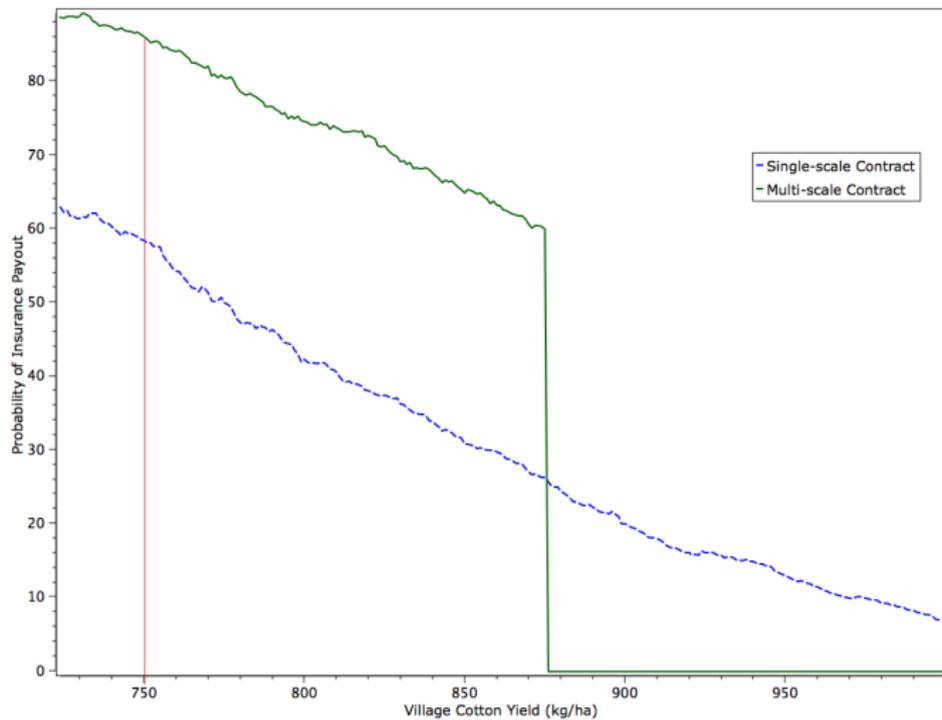


- Farmers pursue a diversified production strategy of growing their own food plus cotton
- Singly buyer (spatial monopsony) value chain credit via group loans, but consequences of default are substantial (informal collateral)
- Group cotton loans also discourage investment as the more a farmer produces, the more likely that some of his output will be 'taxed' away to pay for others in the group (could insurance assist the shift to individual loan contracts?)
- Farmers report that risk keep them from growing less cotton than they otherwise would, or by reducing financial risk exposure by investing less

Two Trigger Area Yield Contract

- Single buyer opens door to cheap area yield insurance
- Area yield contracts can in principle offer strong insurance value (compared to weather-based insurance)
- But over what geographic should yields be calculated?
 - A too small area (e.g., the individual farmer's field in the extreme) creates a moral hazard problem
 - A too large area (e.g., average yields for a county or even a group of villages) lessens the quality of the insurance
- So might two triggers be better than one?
 - Primary trigger set a small area (e.g., village)
 - A higher level "audit" trigger can control moral hazard
- Let's compare single trigger contract set at the 10 village level versus a 2-trigger contract set at the level of single village
- Both contracts carry same price!

Two Trigger Area Yield Contract



The Mali Index Insurance Experiment

- 87 cooperatives eligible for the area yield contract, 59 were allocated to treatment status and offered insurance, while the remaining 28 were allocated to control status and not offered insurance
- Process assures that the two groups are on average identical so that the control group tells us what would have happened to the treatment group without insurance

	Control	Treatment
<i>Pre-intervention outcomes</i>		
Cotton area 2010 (hectares)	2.19	2.44
Cotton harvest 2010 (kg)	2316.6	2291.2
Cotton yield 2010 (kg/ha)	1053.1	914.6***
Area in foodgrains (hectares)	4.02	3.09
<i>Household characteristics</i>		
Household head age	54.9	55.1
Household head years of schooling	0.87	0.76

Impact Results–Difference between Insured & Non-insured Farmers

<i>Purchased insurance:</i>					
	Loans (‘000 CFA)	Area (ha)	Grain Area (ha)	Inputs (‘000 CFA)	Harvest (kg)
Insured	102.875	1.339**	0.639	97.847***	944.8
<i>Believe insured:</i>					
	Loans (‘000 CFA)	Area (ha)	Grain Area (ha)	Inputs (‘000 CFA)	Harvest (kg)
Individual believes insured	138.944	1.569*	1.096	121.010**	837.7

- Wow!

Summary 'Before the Drought' Impacts in Mali

- Across the 2011/2012 period found that insurance caused the average farmer to:
 - To plant 1.3-1.5 hectares more in cotton
 - Borrow an additional 110,000-139,000 CFA which was invested in cotton inputs
 - Harvest almost 1 ton more of cotton
 - Not reduce area planted to maize and other grains
 - Boost family income by some 25%
- In other words, uninsured farmers are every year having lower family income as a way to manage risk
- Insurance allows farmers to earn that potential income!
- Good for value chain too

Cautionary Tale from Burkina Faso



- Military coup ended Mali experiment; Invited to pilot in Burkina with contracts first sold in 2014
- Farmers report that 2015 insurance payments after a drought allowed them to continue in cotton business;
- Very positive despite delayed insurance payments
- But, unlike Mali find *zero* impacts on cotton investment & production
- Do find consequential impacts on investment in farm infrastructure, livestock and sesame production
- Lack of impacts on cotton production result of insurance sales being separated from loan process
- Farmers had to decide how much to plant and borrow before they knew if they had insurance

Cautionary Tale from Burkina Faso

- Despite these muted impacts, both the Cotton company (SOFITEX) and the cotton union (UNPCB) are very enthusiastic about the contract;
- Clear that SOFITEX sees the value to them of a more stable and higher producing cotton sector
- Contract is now being scaling pilot up nation-wide
- Challenges remain to make sure that cotton farmers and the cotton industry can benefit fully from high quality insurance
- We are working with our partners (Allianz, SOFITEX, UNPCG & PlaNet Guarantee) to find a solution to this timing issue

- Global evidence shows that:
 - Index insurance can provide real protection to consumption & assets
 - “Risk reduction dividend” works (in Mali and elsewhere)
- The challenge is to design fail-safe index insurance contracts and find the right mix of prudential regulation and public/private partnership to reap this dividend

Thank you!

