

THE ABILITY OF COTTON TO DRIVE FOOD CROP INTENSIFICATION IN SUB-SAHARAN AFRICA

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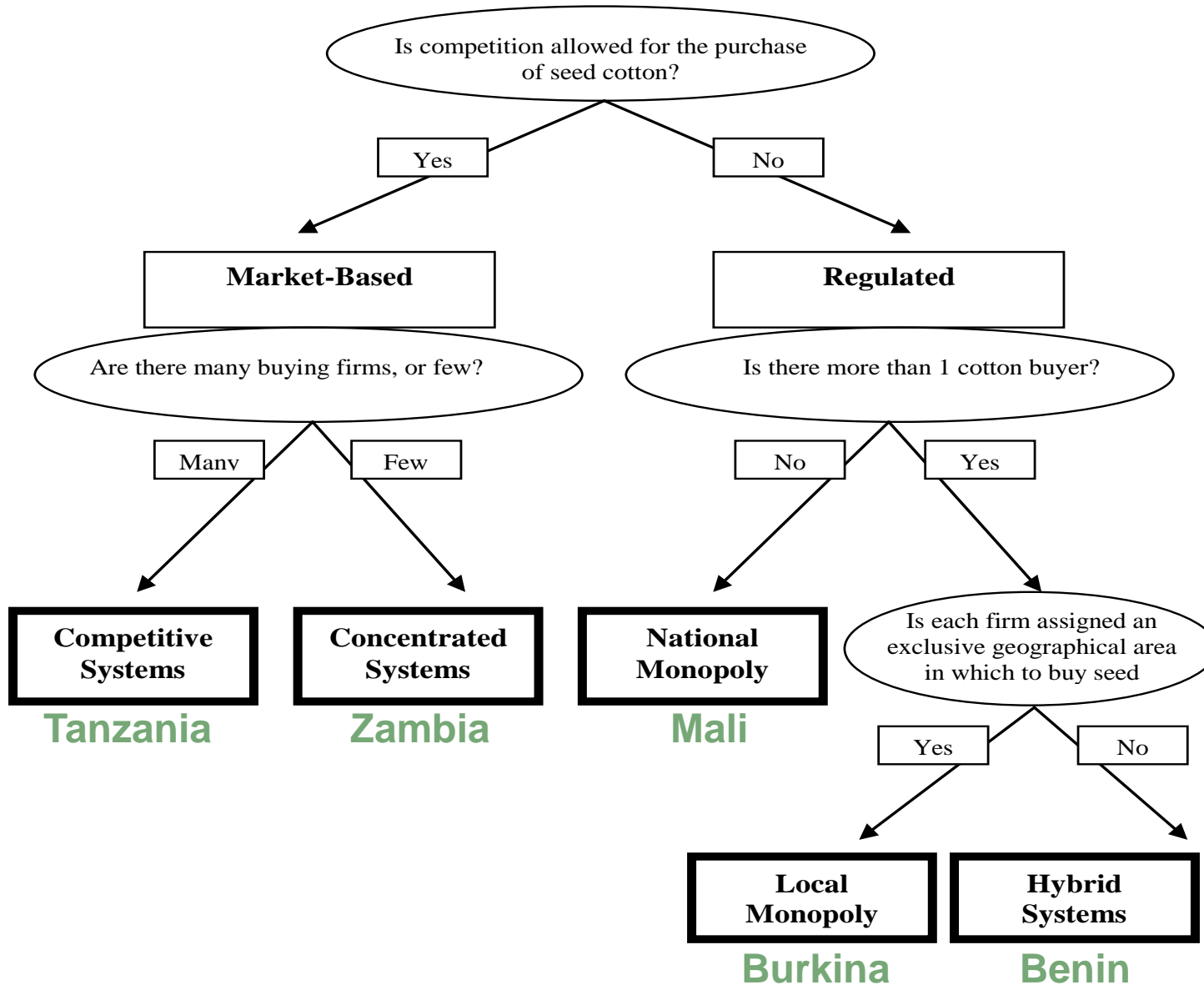
Motivation

- Food price crises of 2007/08 and 2011
- Renewed interest in agriculture and smallholders to improve food security, especially in Africa
- Need for broader and more sustainable access to inputs by smallholders

Research Questions

- Can cash cropping structures spur intensification of food production?
- How the particular institutional structure of a cotton sector might affect its ability to spur such growth in food crop intensification?

Cotton Sector Typology



Institutional Structures & Cotton Sector Performance

- Trade-off between competition and effective coordination
- No structure performs unambiguously best in all performance dimensions
 - **Competitive** - High farm-gate prices but no input credit and no extension to farmers and no investment in cotton quality
 - **National Monopoly** - Good access to inputs on credit and extension services but highly variable farm-gate prices and low cost efficiencies at the ginning level

Food Crop Pathways

- **Direct** – A company providing a service that benefits food crops or whose use is non-excludable
 - Provision of inputs for food crops
 - Extension advice on food crops
 - Mechanization promotion
 - Literacy training

Food Crop Pathways

- **Indirect- Household Level** – Depend on household choices and may involve trade-off between productivity of food and cash crops
 - Higher cash income used on food crops
 - Input diversion to food crops
 - Stronger agricultural skills
 - Agronomic spillovers

Food Crop Pathways

- **Indirect- Community Level** – Investment by private-public actors that may be induced by the cash cropping activities
 - Improved private input supply
 - Improved private marketing infrastructure
 - Public infrastructure

Conceptual Framework- Food Crop Pathways & Cotton Sector Typology

Pathway	Cotton Sector Typology			
	National Monopoly	Local Monopoly	Concentrated	Competitive
Direct				
D1: Input provision for food crops	Medium (but undermined by general inefficiency of the model)	Medium to low (depends largely on outside funding)	Medium to low (depends largely on outside funding)	Unlikely to exist
D2: Extension advice on food crops				
D3: Mechanization promotion				
D4: Literacy training				
Indirect, household level				
IH1: higher cash income used for food crops	No clear prediction	No clear prediction	No clear prediction	No clear prediction
IH2: Input diversion to food crops	Medium (undermines cash crop scheme)	Low (undermines cash crop scheme)	Low (undermines cash crop scheme)	Unlikely to exist
IH3: Stronger agricultural skills	High	Medium	Medium	Unlikely to exist
IH4: Agronomic spillovers	High	Medium	Medium	Unlikely to exist
Indirect, community level				
IC1: Private input supply	High	Medium	Medium	No clear prediction
IC2: Private marketing infrastructure	High	Medium	Medium	No clear prediction
IC3: Public infrastructure	High	Low	Low	Low

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Country Experience- Mali

- National Monopoly (CMDT)
 - Direct
 - Broad mandate for an integrated rural development program
 - Support for the adoption of animal traction
 - Provision of literacy lessons
 - Indirect – Household
 - Higher cash income
 - Input diversion
 - Strong agricultural skills
 - Agronomic spillovers
 - Indirect – Community
 - Poor performance of private input markets
 - Collective development projects

Country Experience- Burkina Faso

- Local Monopoly (SOFITEX, Faso Coton & SONOMA)
 - Direct
 - Provision of inputs for food crops
 - Provision of farm management advisory services
 - Provision of literacy lessons
 - Indirect – Household
 - Higher cash income
 - Input diversion
 - Strong agricultural skills
 - Agronomic spillovers
 - Indirect – Community
 - Poor performance of private input markets

Country Experience- Zambia

- Concentrated (Cargill & Dunavant)
 - Direct
 - Tractorization services
 - Training in integrated pest and natural resource management
 - Promotion of soybeans
 - Indirect – Household
 - No provision of fertilizers, so input diversion and agronomic spillovers not operational
 - Indirect – Community
 - Overwhelming policy emphasis on maize limits role for cotton

Country Experience- Tanzania

- Competitive (several gins)
 - Direct
 - Entirely absent
 - Indirect – Household
 - No extension advice
 - No provision of credit inputs due to side-selling
 - Indirect – Community
 - No evidence

Conclusions

- **Competitive**- promote food crop productivity to the extent that increased incomes from cotton relaxed farmers' cash constraints and allow them to buy food crop inputs
- **National Monopoly**- able to drive sustained food crop productivity growth as long as the cotton sector remains profitable
- **Local Monopoly and Concentrated**- the effect of cotton on food crops depends largely on the regulatory structures

THANK YOU

Questions?

Summary

Pathway	Expected Performance	Realized Performance	Does evidence concur with expectations?	Adequacy of Evidence Base & Other Comments
Direct				
D1: Input provision for food crops	<p>Strongest for national monopolies, absent for competitive, medium-to-low for local monopolies and concentrated</p>	<p>Inconsistent for national and local monopolies: pathways frequently but not always supported. Positive (but limited evidence) for concentrated sectors. Entirely absent in competitive.</p>	<p>Largely yes, though stronger evidence than expected for existence in local monopolies.</p>	<p>Strong for national monopolies and competitive; medium for local monopolies (and often complicated by recent move out of national monopolies). Limited for concentrated.</p>
D2: Extension advice on food crops				
D3: Mechanization promotion				
D4: Literacy training				
Indirect, household level				
IH1: higher cash income used for food crops	<p>No clear prediction for IH1 in any type. For IH2-IH4, best in national monopolies, lower in local monopolies and concentrated, absent in competitive</p>	<p>All four (including IH1) strong in national monopolies. Variable in local monopolies. Inconclusive in concentrated. Absent in competitive.</p>	<p>NA for IH1. Yes for IH2-IH4</p>	<p>For IH1: strong for national monopolies, relatively weak in other sector types. For IH2-IH4: Strong for national monopolies and competitive. Less so in concentrated (confounding effect of maize policies in Zambia) and local monopolies.</p>
IH2: Input diversion to food crops				
IH3: Stronger agricultural skills				
IH4: Agronomic spillovers				
Indirect, community level				
IC1: Private input supply	<p>Strong in national monopolies, medium-to-low in local monopolies and concentrated, absent in competitive.</p>	<p>Strong in national monopolies. Inconsistent in local monopolies and concentrated. No evidence in competitive.</p>	<p>Yes for national and local monopolies and concentrated. Not clear for competitive.</p>	<p>Strong evidence base for national monopolies. No evidence in competitive (does this indicate absence?). Weak for local monopolies.</p>
IC2: Private marketing infrastructure				
IC3: Public infrastructure				