



Market Access and Value Chain Development

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Let's think differently.

1 • Find Better Ways to Measure the Impact and Scalability of What We Do

Randomized Controlled Trials (RCTs)

- External validity
- Heterogeneous effects
- Heterogeneous treatment
- Difficult to implement in demand-driven designs

Quasi-Experimental Methods

- Concerns over proper identification strategies and econometric analysis
 - Jacob and Zhu (2012)
 - Bloom (2012)
 - Imbens and T. Lemieux (2008)
- “Fuzzy” regression discontinuity
 - Jacob and Zhu (2012)
- Concerns over assumption of program placement’s conditional exogeneity

1 • Find Better Ways to Measure the Impact and Scalability of What We Do

Scaling Up

- Huge gap on research
- Issues of external validity of RCTs

Recommendations are based on implicit extrapolation from a small number of experiments to a wide variety of dissimilar contexts

- Deaton (2010)
- Pritchett and Sandefur (2013)

Identical policies have different effects among individuals due to unobserved differences between populations

- Allcott (2012)
- Attanasio, Meghir and Szekely (2003)

Need a method that accounts for heterogeneity across locations; or an evaluation that takes the issues into account

- Athey and Imbens (2006) derives an estimator to extrapolate results, overcoming this
- Gechter (2014) improves a method for predicting the Average Treatment Effect

2. Move Away from the Farmer to Value-Chain Level Analysis



Policy and regulation

- Tariffs, import/export restrictions, taxes, subsidies
- Non-tariff trade barriers (e.g. food safety standards)
- Third party support services (R&D, farmer extension, etc.)
- Ease of doing ag-related business
- Environmental and social standards

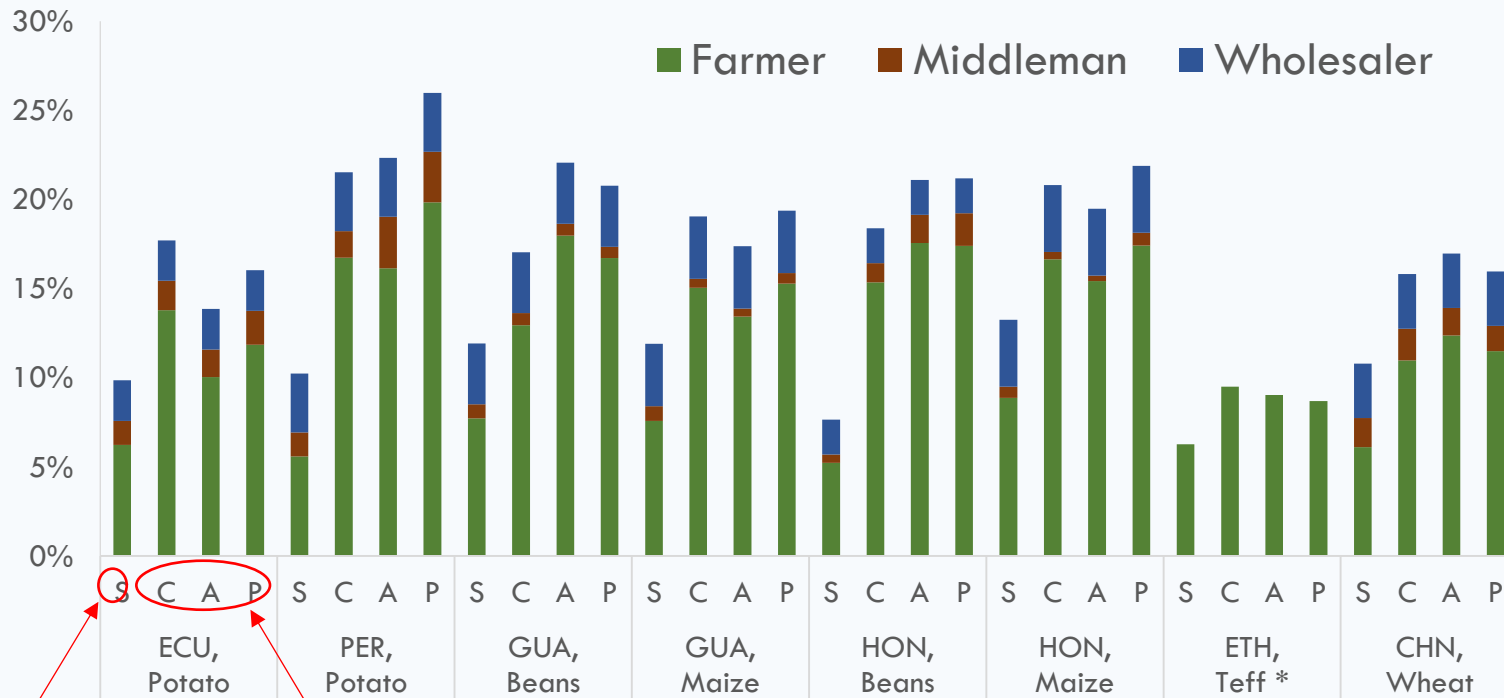
Infrastructure

Financing

Source: IFC

3. Identify Bottlenecks

Food Losses (% of total production value)



- Significant losses, but they vary based on methods
- The aggregate “self-reported method” yields less losses systematically
- Losses are larger at the farmer level

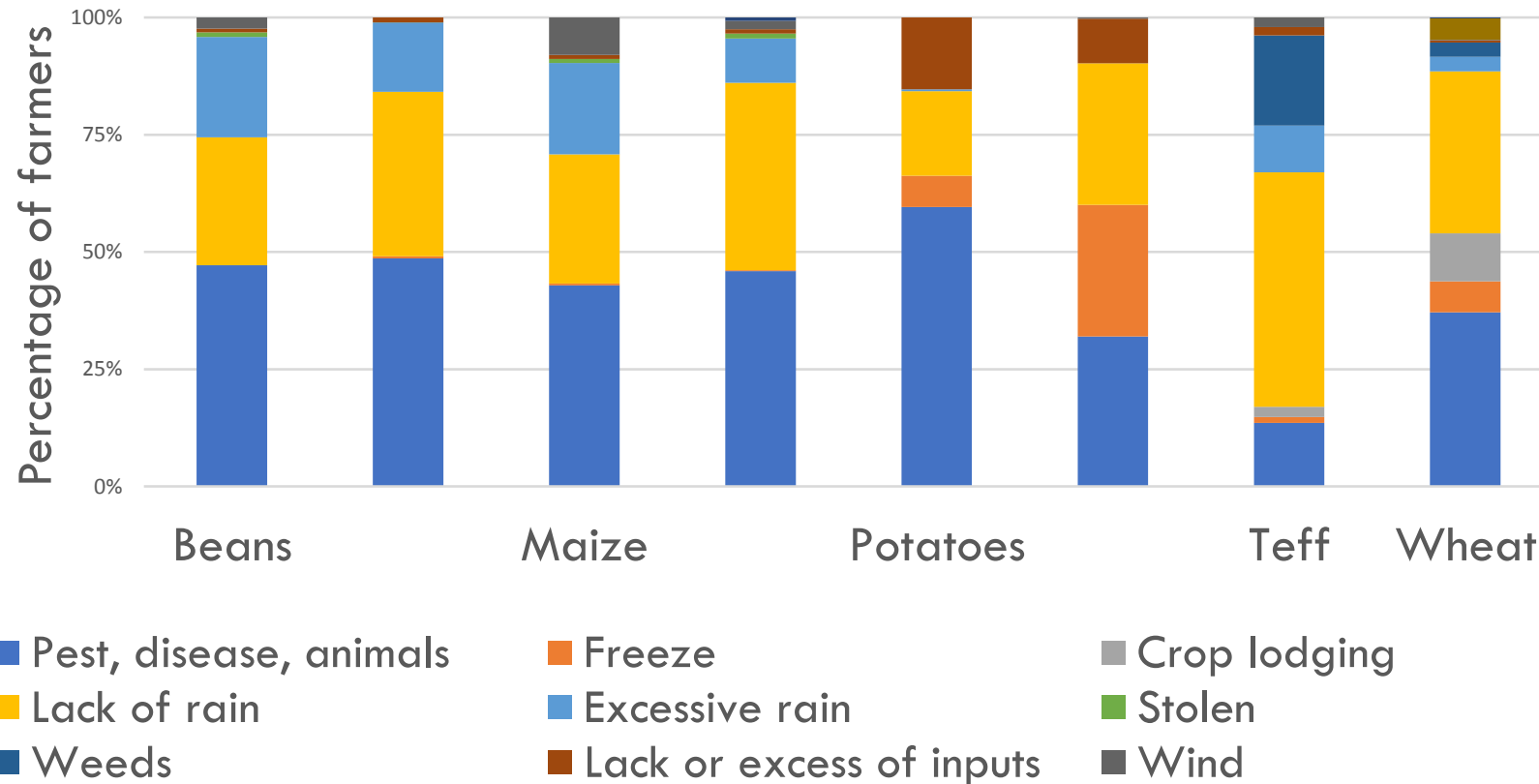
Self-reported (S) losses -Traditional method

Category classification (C), Attribute measurement (A) and price (P) methods

Source: Delgado, Schuster and Torero (2017). “Reality of Food Losses: A New Measurement Methodology,” University Library of Munich.

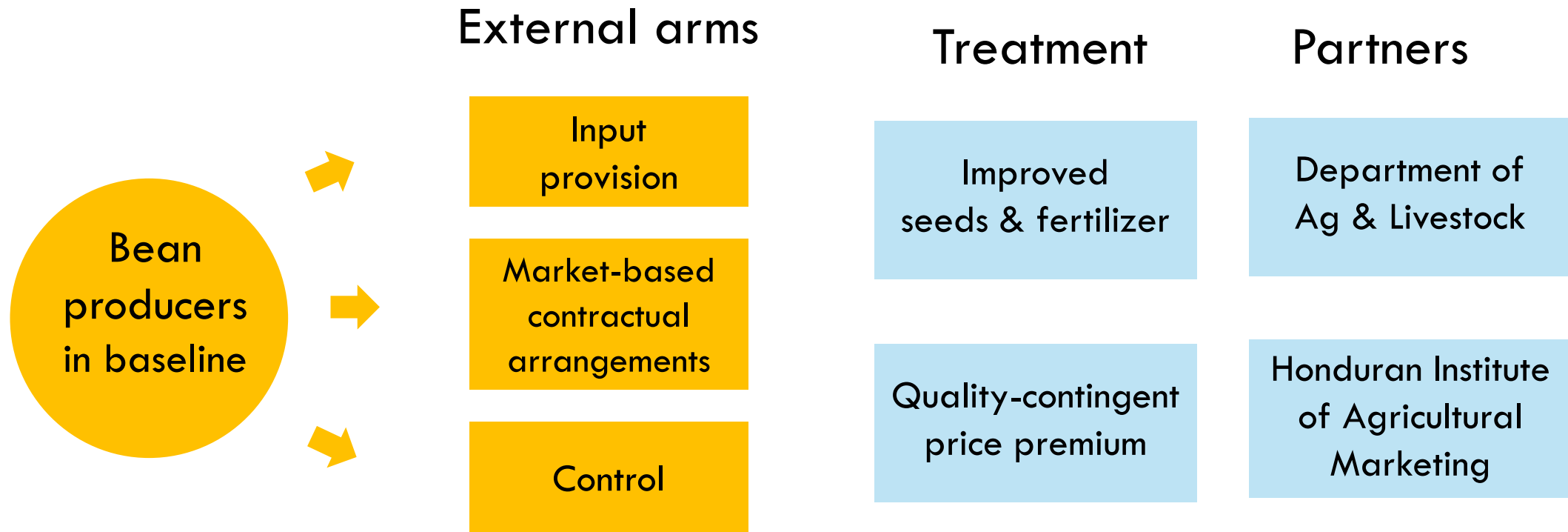
3. Identify Bottlenecks

Causes of Pre-Harvest Losses for Selected Crops



Source: Delgado, Schuster and Torero (2017). "Reality of Food Losses: A New Measurement Methodology," University Library of Munich.

3. Identify Bottlenecks and Implement Interventions: Honduras



Source: Delgado, Nakasone and Torero (2019), forthcoming

3. Identify Bottlenecks and Implement Interventions: Results

Market-Based Incentives Treatment Works Better

- Direct incentives to farmers
- Links farmers with corporate buyers
- Price premium for high-quality beans
- 7% improvement in reducing loss of quality



Source: Delgado, Nakasone and Torero (2019), forthcoming

4. Integrate Smallholders into Dynamic Value chains

We need to

- learn from all the ineffectual policies and solutions
- find best ways to aggregate — horizontal and vertical coordination
- innovate standards to differentiate staple products and high-value commodities

4. Integrate Smallholders into Dynamic Value chains

- There are barriers to vertical integration that makes it desirable to contract out
 - e.g. Land laws and need for flexibility
- Product differentiation makes contracting an attractive option
- Being a price taker and facing price variability puts significant pressure on contracts
- Exploitation is possible when firms have monopsonistic power

4. Integrate Smallholders into Dynamic Value chains

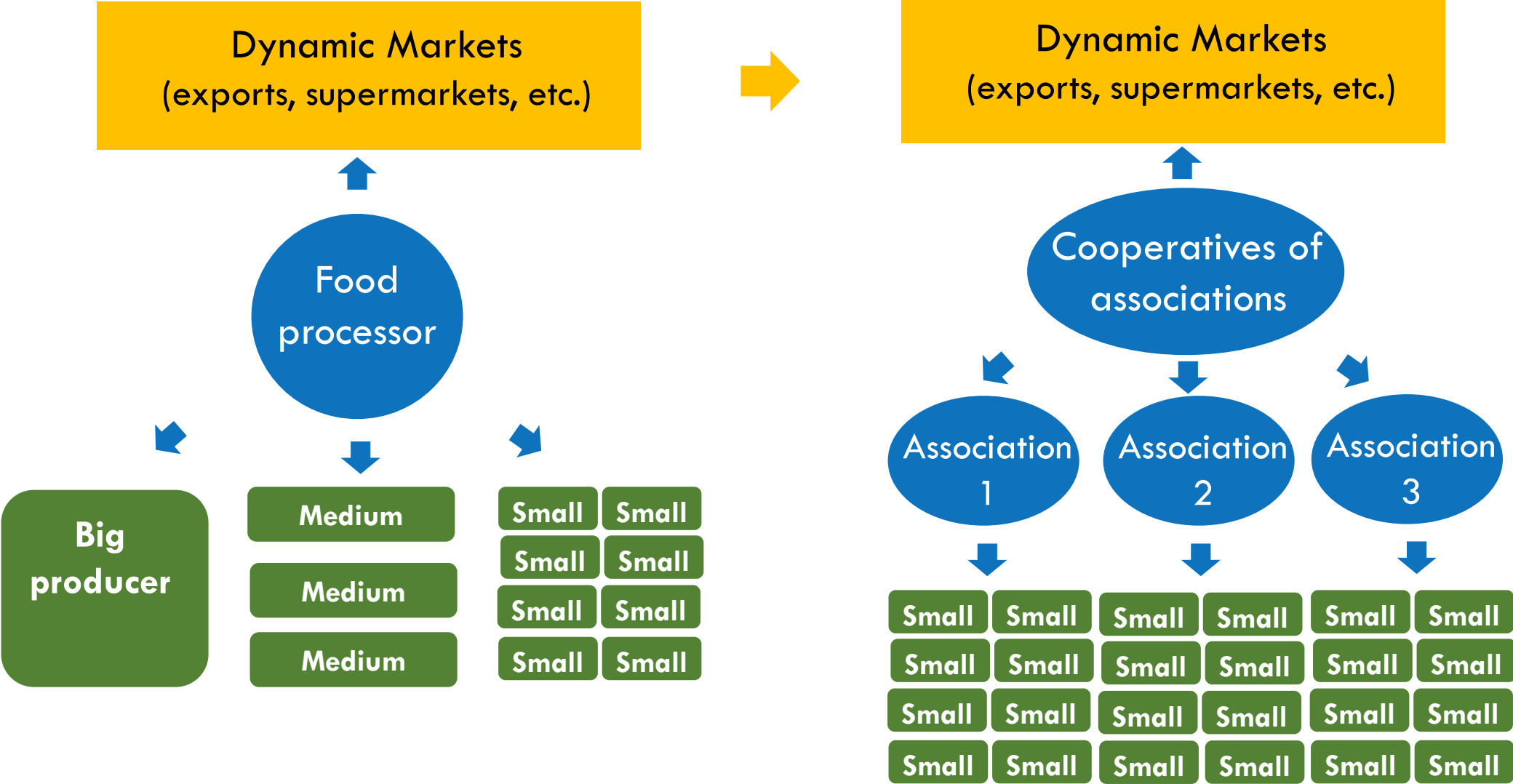
Smallholders' tendency to get away from contractors (high monitoring costs)

- Cash-constrained farmers sell directly to middlemen (Wibonpoongse et al., 1998)
- Small producers don't have resources to meet the quality specifications (Boselie et al., 2003)
- Standards in modern value chain are more sophisticated (Reardon and Berdegúé, 2002, etc.)
- Small growers may divert inputs, such as feeds in contracts involving livestock products (Delgado, et al., 2003)

Problems for the producer that accepts the contract

- Monopsonistic power of contractor (Schrader, 1986, etc.)
- Increase in specific production risk (Featherstone and Sherrick, 1992, etc.)
- Higher costs (Runsten & Key, 1996, etc.)
- Contractor defaults (Glover, 1987, etc.)

Contract Farming: 2 Extreme Modes



Incentive-Compatible Contracts

Costs of monitoring

Club formation

Abuse of monopsony
power

Developing strong rural farmer
associations and tied products

Price schemes

Price schemes with incentives on
productivity and quality

Quality standards

Joint definition of quality

Access to credit

Double ransom model

Productivity

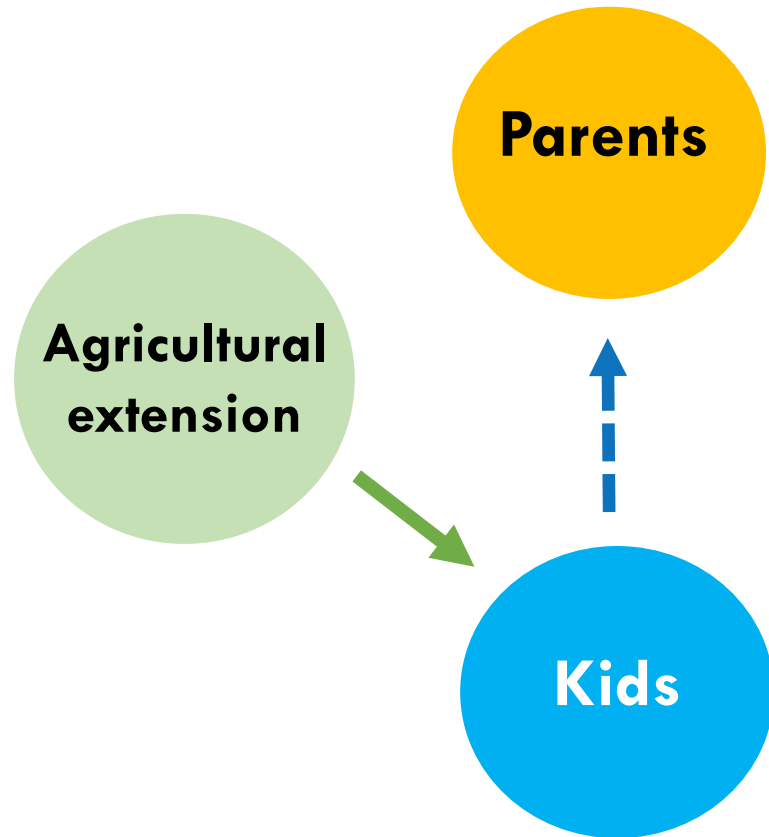
Clear price incentives

5. Huge Innovation on Extension

- Previous research has questioned its effectiveness (Gautam 2000, Evenson 2001, Anderson and Feder 2007)
- Areas are scattered and can be hard to reach
- Agency problem: hard to monitor extension agents' efforts and performance
- Emerging idea: Use IT for agricultural extension

5. Huge Innovation on Extension

Kids to Parents: Extension



- Traditional Agricultural Extension: costly, hard to reach out in remote areas and hold extension workers accountable (e.g., Cole and Fernando 2012)
- ICTs can solve these shortcomings
- Challenge: Computer-illiterate adult population in rural areas

Kids and ICTs for Extension

Example: molasses trap to catch corn earworm

How to identify
the problem?



Explain
the problem



Simple Solution
(Molasses Trap)



How does the
solution work?

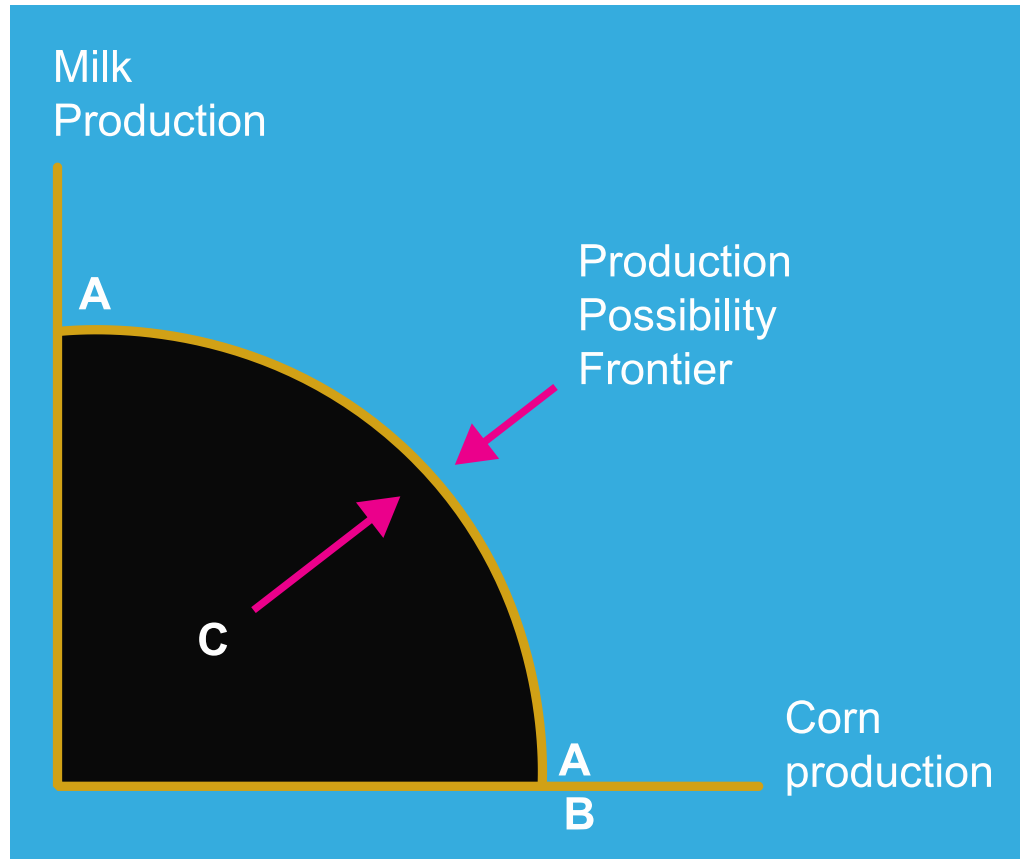


Kids to Parents: Results

- Implemented field experiment to teach agricultural practices to high school students
- Information appears to be transmitted to farm managers in the household
- When the student is taught an agricultural practice, farm manager's knowledge of that practice increases by 6-9 percentage point (20%-30%)
- • Adoption of the practice increases by 3-5 percentage point (16%-23%)

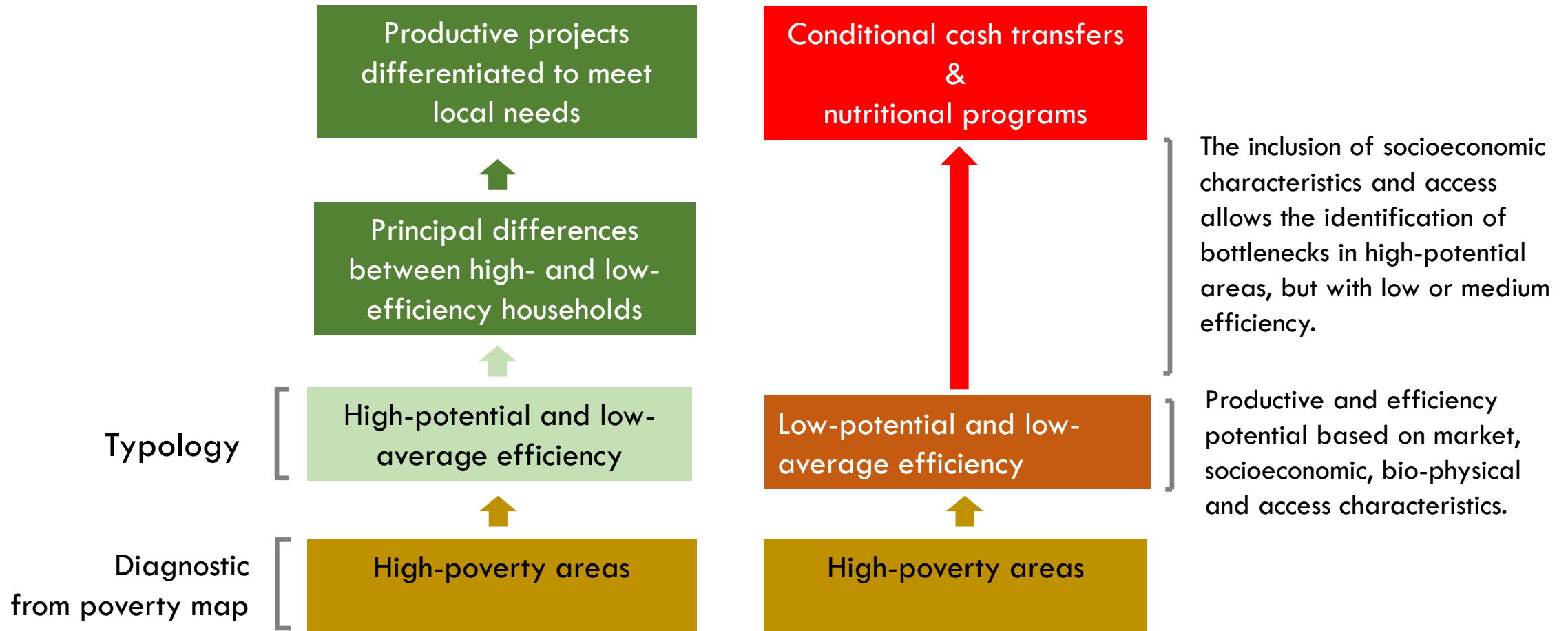
6. Better Targeting and Sequencing

The Concept of (Stochastic) Profit Frontier

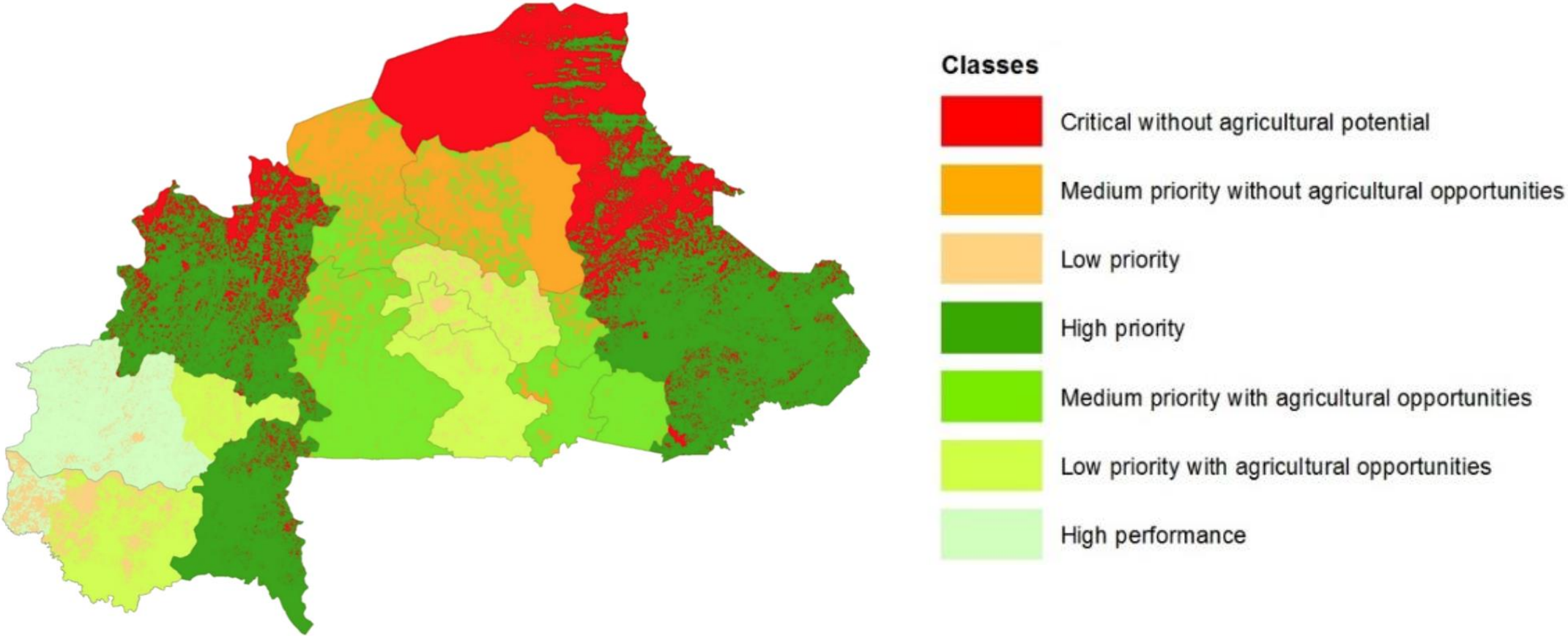


- Based on a simple economic concept: the Production Possibility Frontier (PPF)
- All the possible production combinations are found within the PPF
- Outside of the boundary are combinations, which are not achievable under current conditions
- The efficient use of resources is along the boundary

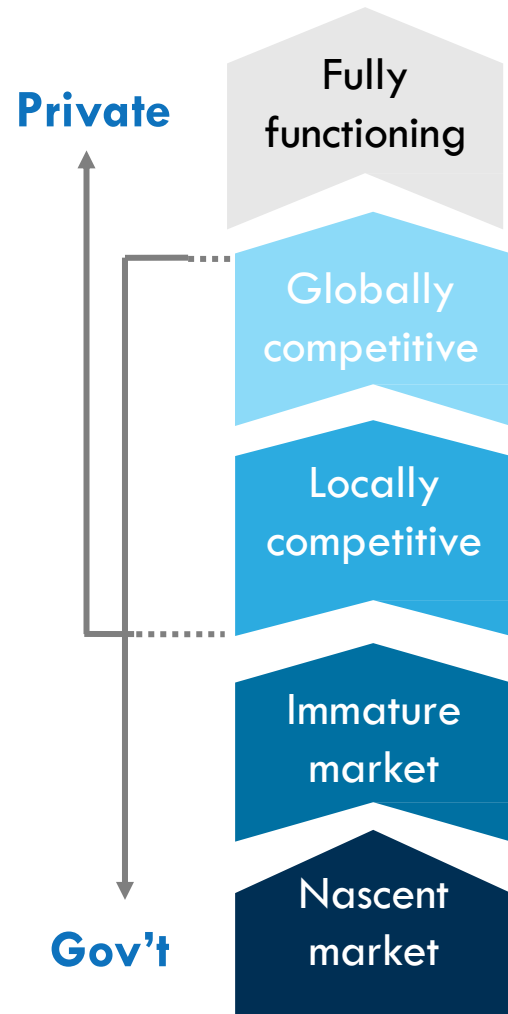
Advantages of Micro-Region Typology



Grouping Diverse Criteria into 7 Micro-Regions: Burkina Faso



Market Segmentation Model for Identifying Interventions



- Globally competitive production
- Little government distortion
- Finance needs to adapt to agribusiness requirements
- Globally competitive production
- Existing policy distortions
- Players along the value chain have integrated operations
- Sector competitive on import parity basis
- Functioning domestic value chain
- Local processing to meet market conditions
- Limited infrastructure
- Unreliable links to the value chain
- Significant challenges accessing finance
- Challenging environment for value chain to develop



Thank you.