



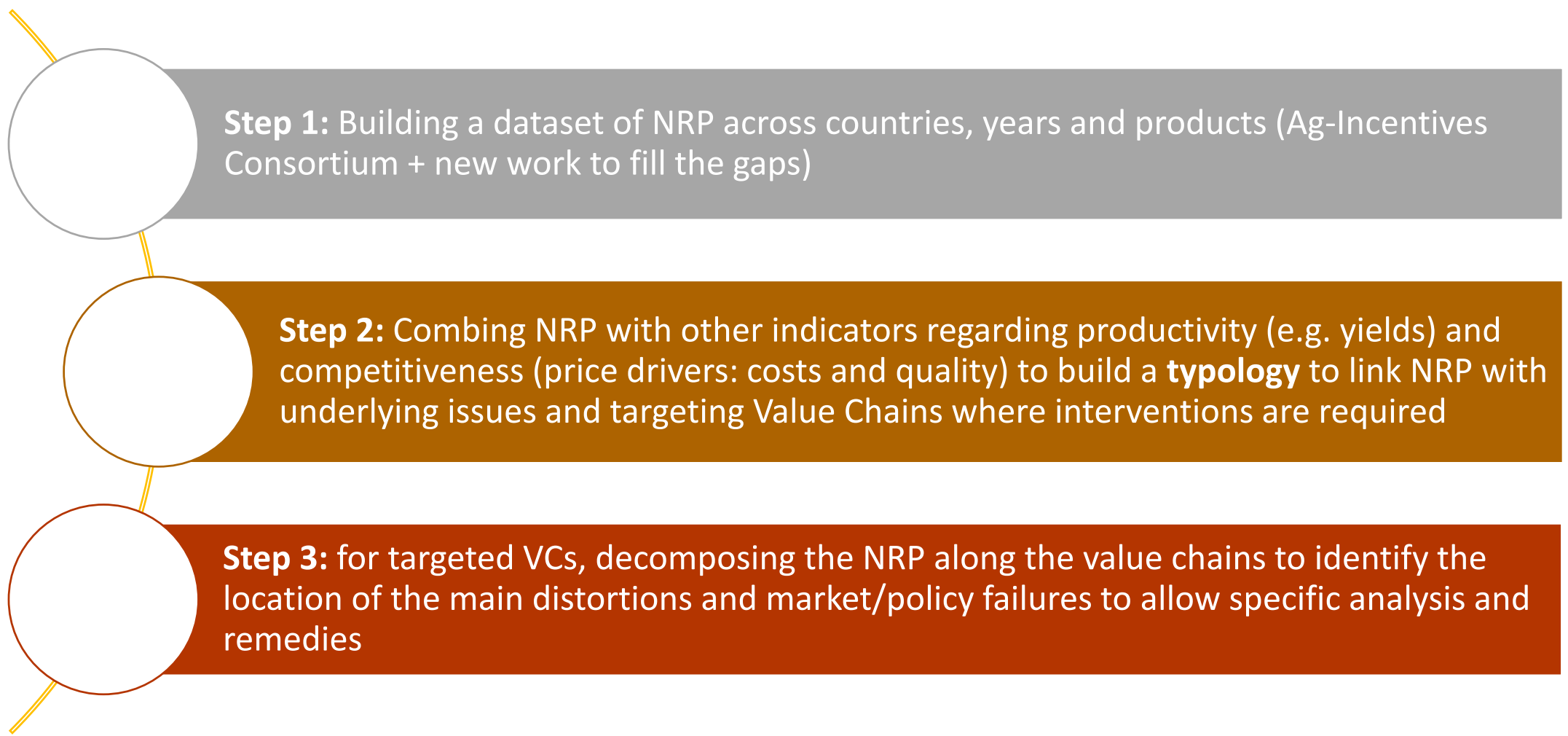
Inclusive and Efficient Value Chains

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3 steps approaches for targeted interventions for efficient and inclusive value chains

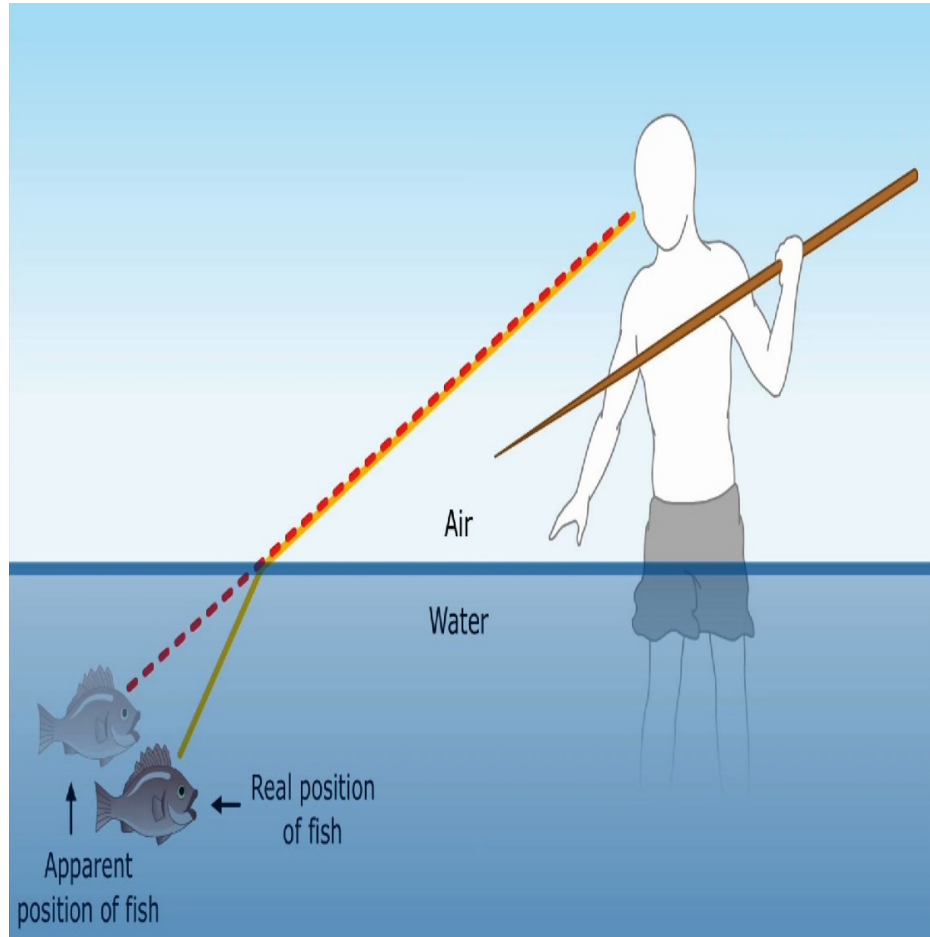


Step 1: Building a dataset of NRP across countries, years and products (Ag-Incentives Consortium + new work to fill the gaps)

Step 2: Combing NRP with other indicators regarding productivity (e.g. yields) and competitiveness (price drivers: costs and quality) to build a **typology** to link NRP with underlying issues and targeting Value Chains where interventions are required

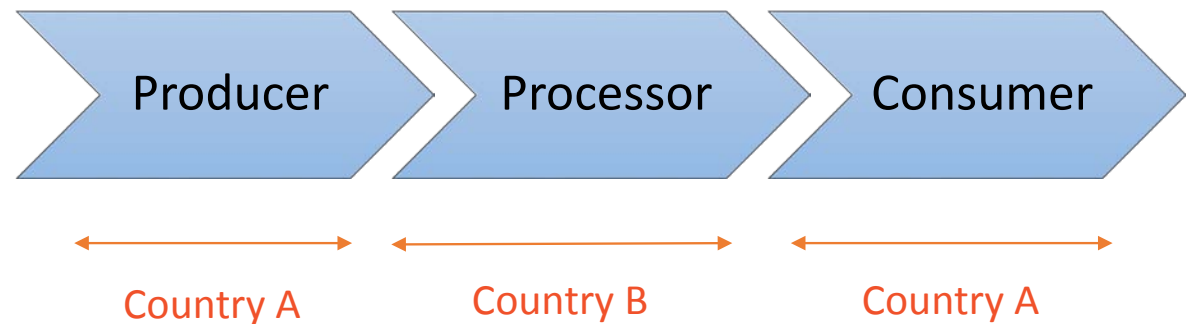
Step 3: for targeted VCs, decomposing the NRP along the value chains to identify the location of the main distortions and market/policy failures to allow specific analysis and remedies

Step1: Understand the optics of policy spaces or miss the fish (and stay hungry) – linking local to regional and to global



- Measurement and Analysis of the distortions along the value chains in different policy environments
- Promote cooperation to reduce policy distortions (smoothing process of changing medium)

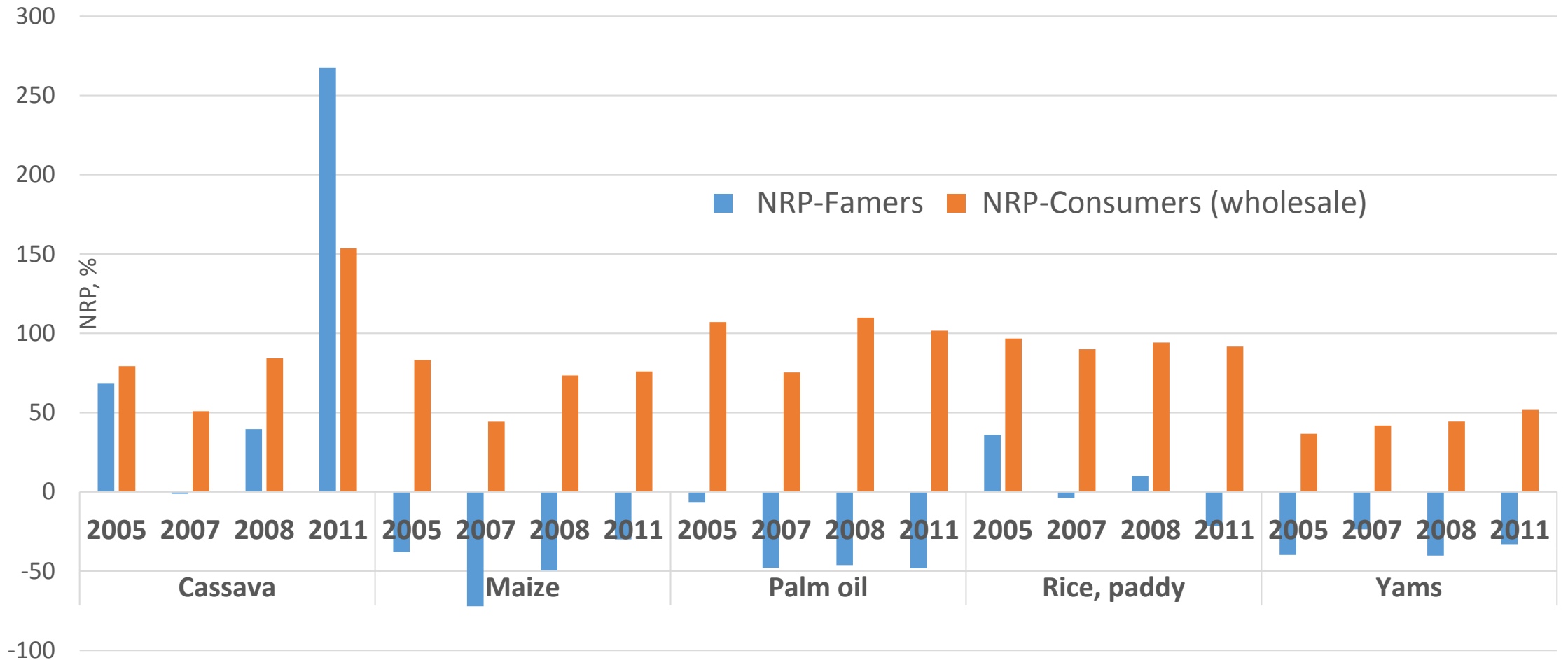
A simple value chain



A Globalized Value Chain

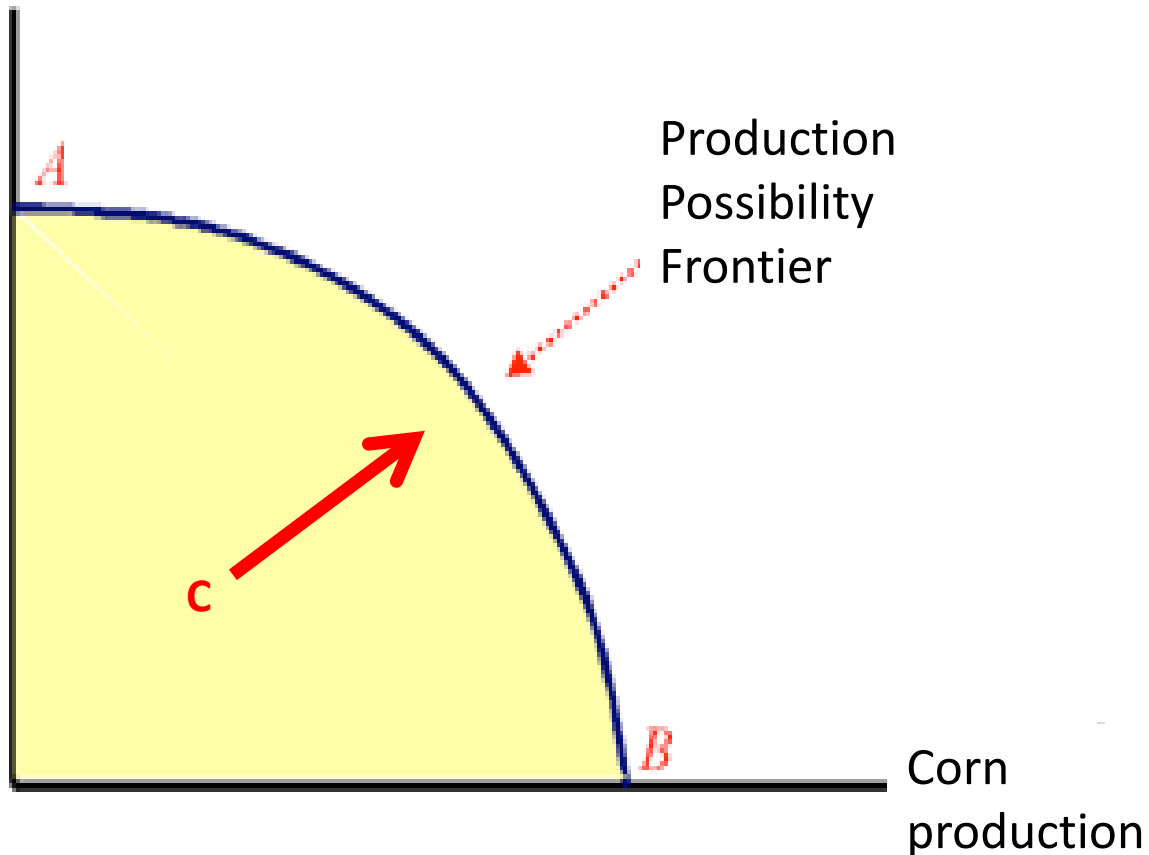
Step 1: NRP along the value chains for Ghana

Higher price for consumers does not mean higher incentive for farmers (significant problem for the Maize VC)



Step 2: Targeting Value chain interventions

Milk
production



The concept of (stochastic) **profit frontier**

- This approach is 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.

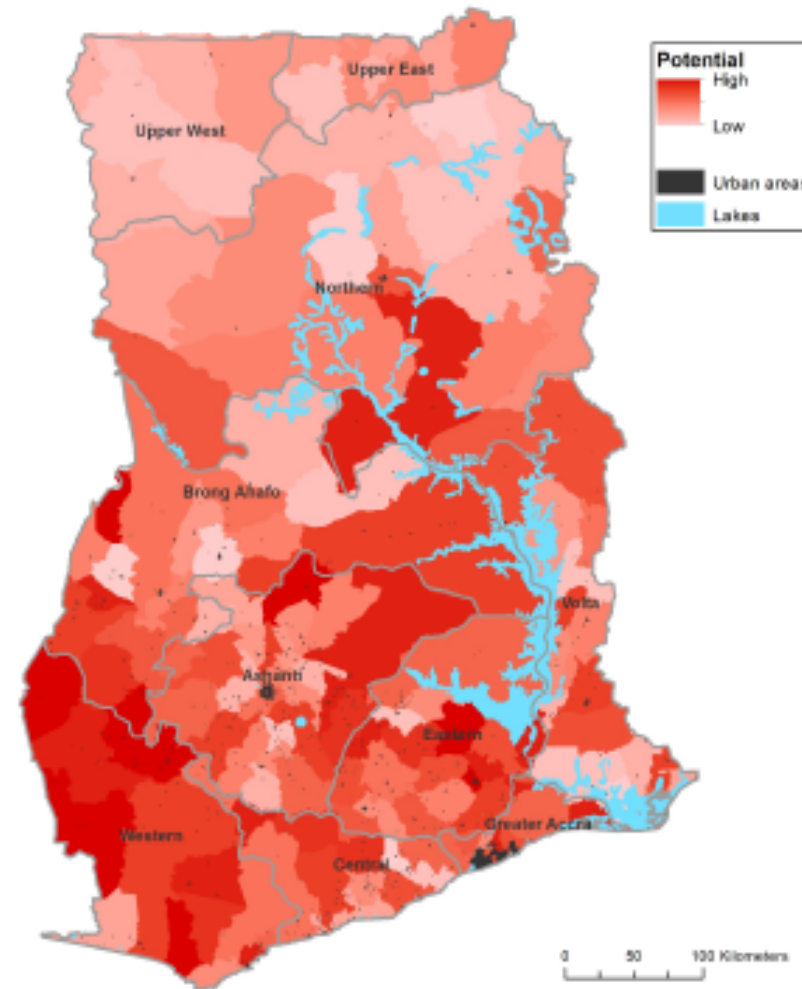
Step 2a: Identifying Agricultural potential

Preview of results - Ghana: Agricultural potential

- The stochastic frontier estimations and extrapolation of results allows us to estimate agricultural potential for all regions in Ghana.
- In this context, we can define a region's "potential" as the maximum annual profit an average smallholder can obtain from his or her farm in that region.
- Darker colored areas (such as the cacao producing areas in the Western region) indicate higher farm profit generating potential.

Agricultural potential map

Potential for crop, livestock, poultry and fishing activities



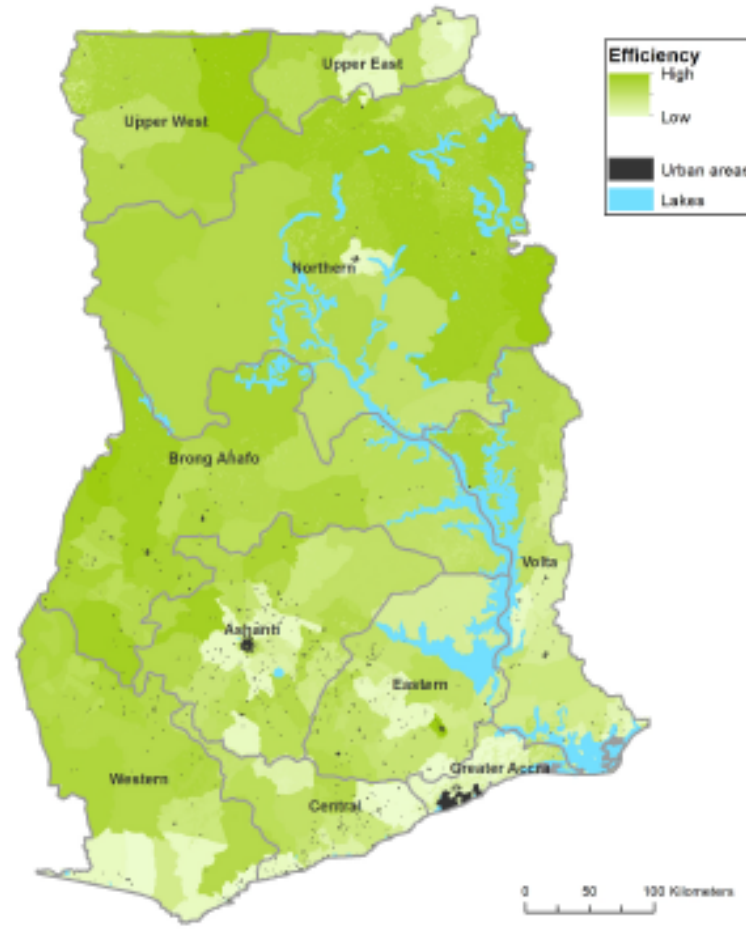
Step 2b: identifying level of efficiency

Preview of results - Ghana: Agricultural efficiency

- In combination with the potential estimates, regional efficiency gives us a sense of how agricultural bottlenecks and opportunities are distributed across Ghana.
- Short term productive investments in high potential regions only make sense if full efficiency has not been achieved yet.
- Extremely low potential regions might see limited benefits from investments aimed to reduce inefficiencies in agriculture due to the low farm production and profits ceiling.

Agricultural efficiency map

Efficiency of crop, livestock, poultry and fishing activities



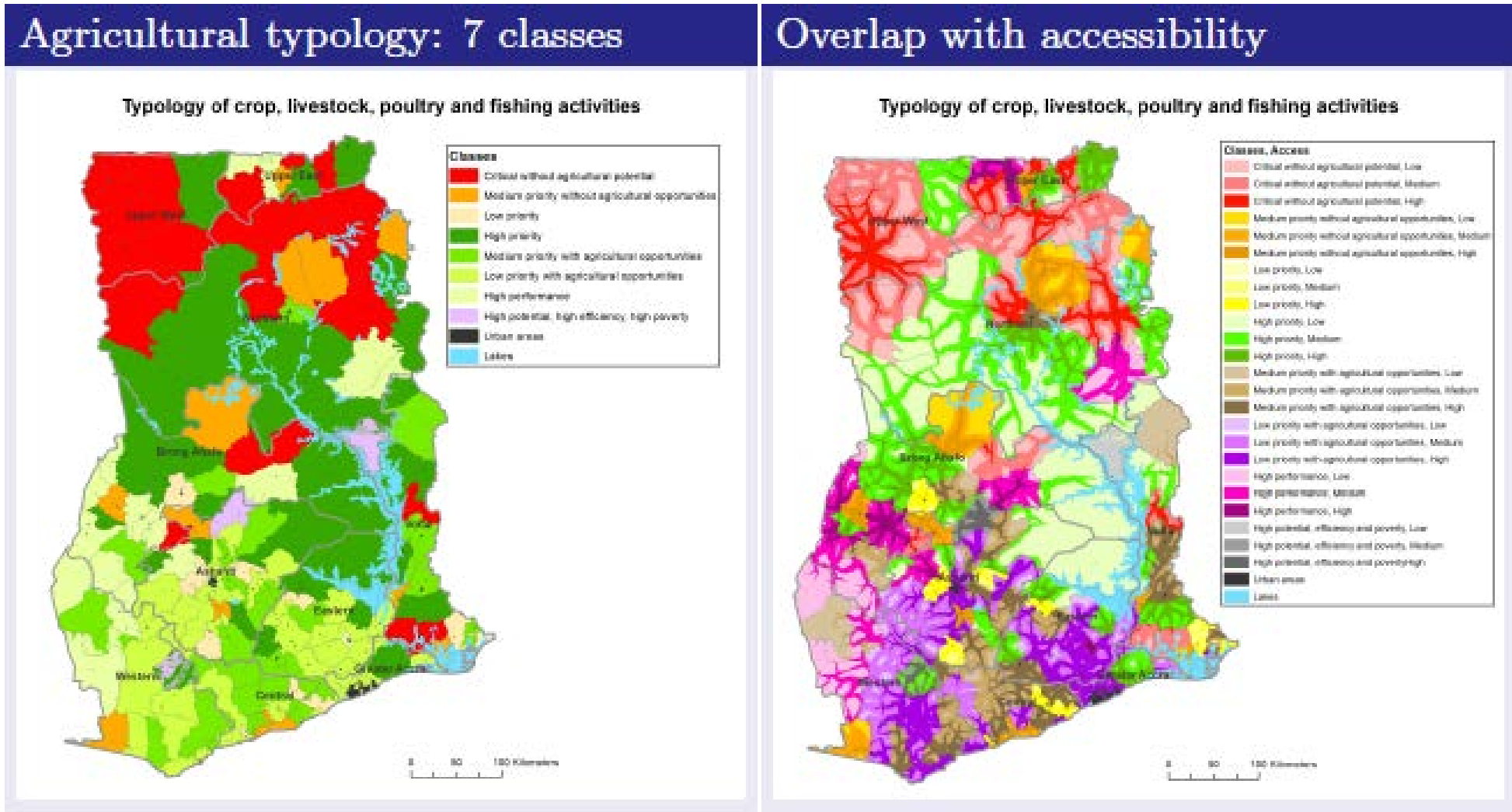
Step 3: Targeting - combining efficiency, potential, poverty and market access

Our focus for VCD will be areas with:

- High priority
- Medium priority with agricultural opportunities

Where priority refers to areas where poverty count is the highest when overlapping with the poverty map.

Finally, high performance areas will be used to learn from them given they have high efficiency, high potential and low poverty.



Step 3: Upgrading selected value chains

- In this stage we will use several tools developed to assess the market failures, missing markets in the selected value chains from Stage 1 and in the targeted geographical areas from Stage 2.
- The assessment tools will help to identify major problems in the different nodes of the value chains
- Once the problems are identified solutions will be tested and validated (through RCTs and other state-of-the-art impact evaluation methods)
- Finally, we will work with our partners so that they can scale up the validated solutions

Examples of interventions to strengthen value chains and linking with private sector



Policy reforms; tax and trade



Third party validation of quality in milk marketing in Vietnam



Contract farming incentives to increase regularity of delivery of milk in Senegal, with added incentives for child nutrition



Quality grading of onions in Senegal



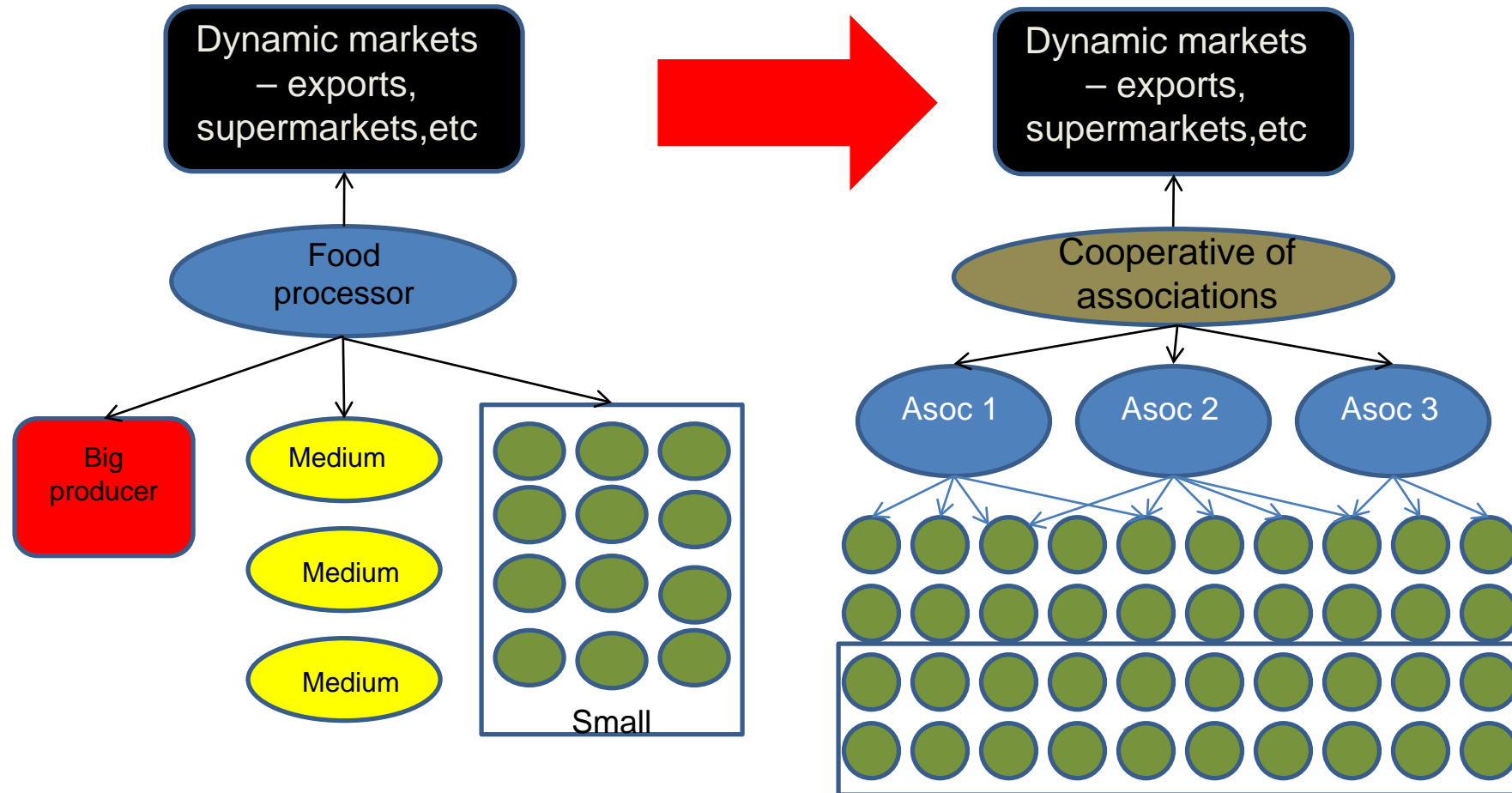
Design of working capital loans for farmers' organizations in Uganda to support aggregation for marketing and secure higher prices

Case 1

Contract Farming – Use of Incentives

Contracting out of Poverty

Contract farming two extreme models



Incentive-Compatible contracts

- Costs of monitoring
- Abuse of monopsony power
- Price schemes
- Quality standards
- Access to credit
- Productivity
- Club formation
- Developing strong rural farmer associations and tied products
- Price schemes with incentives on delivery, productivity and quality
- Joint definition of quality
- Double ransom model
- Clear price incentives

Identify market failures and bring sustainable solutions



Use best possible economics and experimental methods



Scale up through partnerships

Contract farming: Risks and Benefits of Partnership Between Farmers and Firms

(Nicholas Minot and Loraine Ronchi)

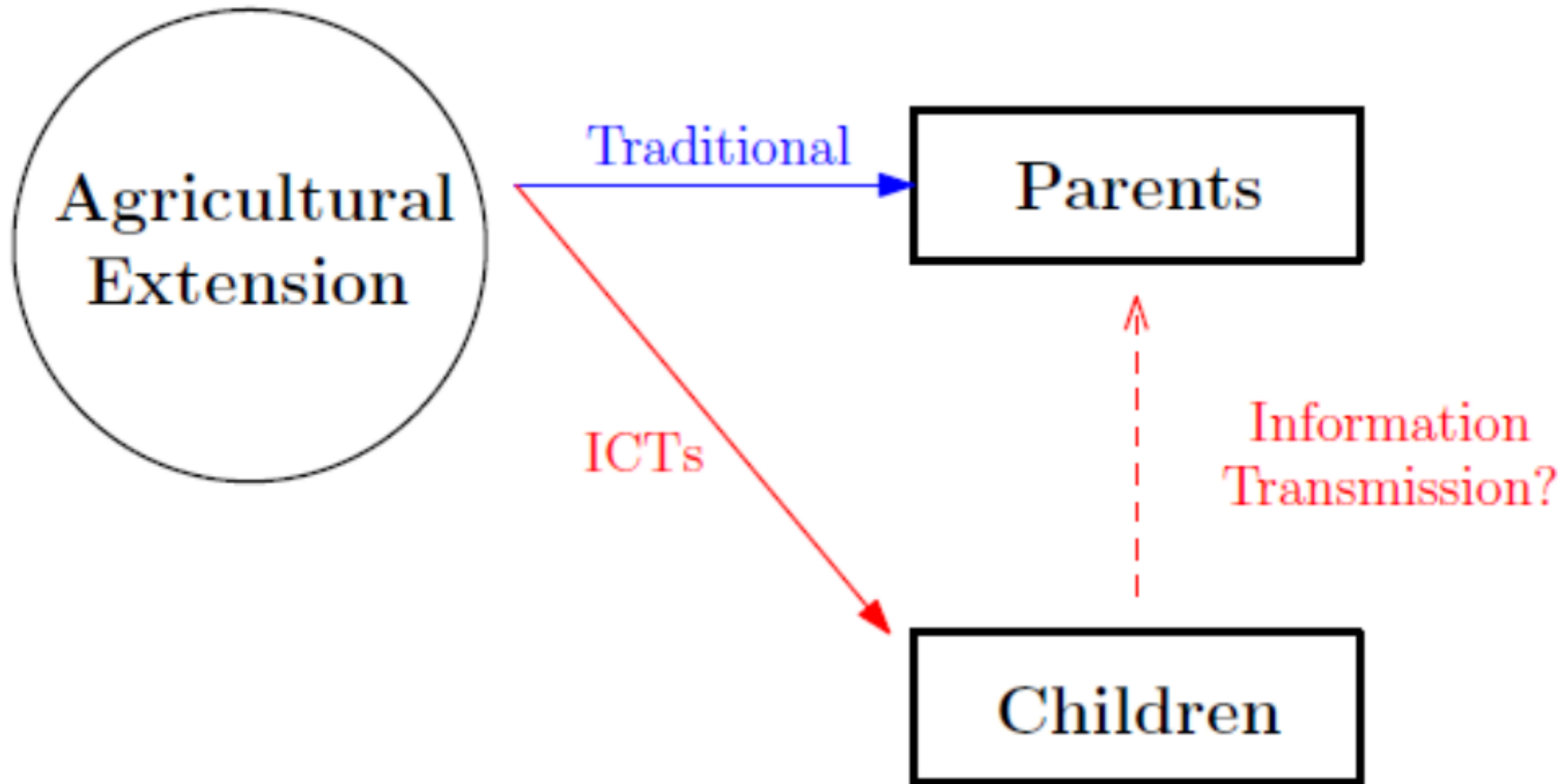


Category	Study	Country	Commodity	Results
Impact of contract farming on income or revenue	Bellemare, 2012	Madagascar	Fruit	A 1% increase in the likelihood of participating in contract farming is associated with a 0.5 percent increase in household income. This implies 50% of income. The study also found that participation also increases income from non contract.
			Grain	A 1% increase in the likelihood of participating in contract farming is associated with a 0.5 percent increase in household income. This implies 50% of income. The study also found that participation also increases income from non contract.
			Vegetables	A 1% increase in the likelihood of participating in contract farming is associated with a 0.5 percent increase in household income. This implies 50% of income. The study also found that participation also increases income from non contract.
	Bolwig, Gibbon, and J.	Uganda	Coffee	Positive revenue effect for contract farmers compared to a control group on non-contracting farmers. With full information maximum likelihood revenue increase of 75% in net coffee revenue relative to no contract participation.

Case 2

**Upward
Intergenerational
transfer of information
Happy Phases**

- Traditional Agricultural Extension: costly, hard to reach remote areas, accountability of extension workers.
- ICTs can solve many of these shortcomings.
- Problem: Computer-illiterate adult population in rural areas.



Intervention

- One school in the Northern Highlands of Peru (enrollment ≈ 210)
 - Students involved in farm chores: 95% help in agricultural activities ($\bar{x}=3.1$ hrs/week) and 96% help in animal rearing ($\bar{x}=12$ hrs/week).
- Most severe problems for farmers: blight & flea beetle (potato), earworm (corn), ticks & bloating (guinea pigs), and cold (chicken)
- Cost-effective and simple mechanisms.
- Randomize information (individually) among students.



How to identify the problem?



Explain the problem



Simple Solution (Molasses Trap)



How does the solution work?



Not any type of knowledge...

- Include variable indicating if the student in the household was assigned to watch ANY video:

$$Y_{ij} = \beta Video_{ij} + \theta AnyVideo_i + \alpha_j + \varepsilon_i + \mu_{ij}$$
- Effect only coming for practices taught through videos.

	(1)	(2)	(3)
Ag Practice Video ($Video_{ij}$)	0.078*** (0.023)	0.100*** (0.030)	0.079*** (0.023)
Any video	0.004 (0.034)	-0.005 (0.038)	0.007 (0.038)
Constant	0.600*** (0.034)	0.589*** (0.036)	0.623*** (0.039)
Observations	3,045	2,415	2,565
Households	203	161	171
Sample			
Both BL and EL	Yes	Yes	Yes
Only BL	Yes	Yes	No
Only EL	Yes	No	Yes

Adoption of Agricultural Practices

- 17 questions about agricultural practices explained in the videos.
- ITT estimate: videos increased adoption of agricultural practices by 3.5 pp.

<i>Video_{ij}</i>	0.035*
	(0.021)
Constant	0.242***
	(0.026)
Observations	3,451
Households	203



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- ILRI

Help and Service

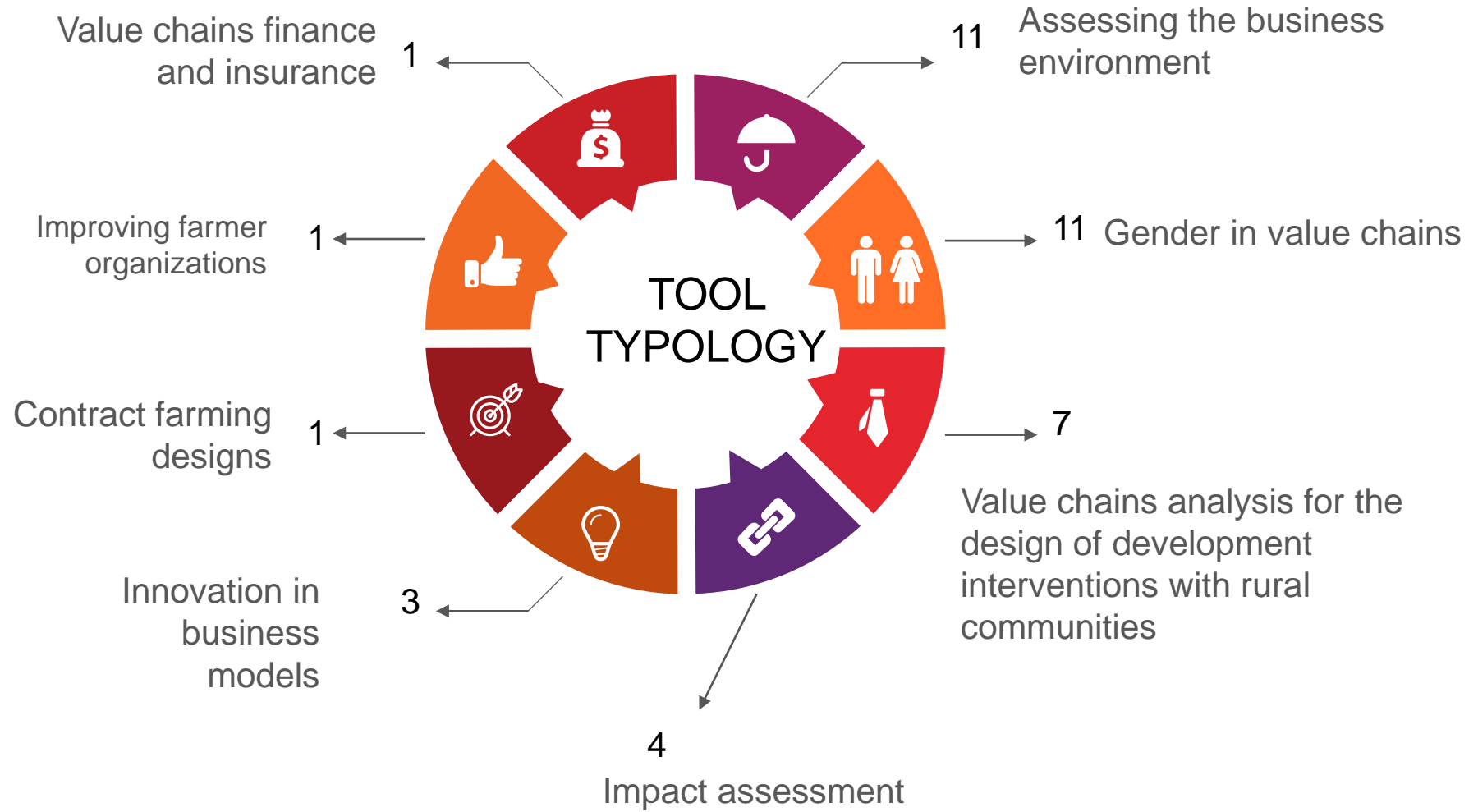


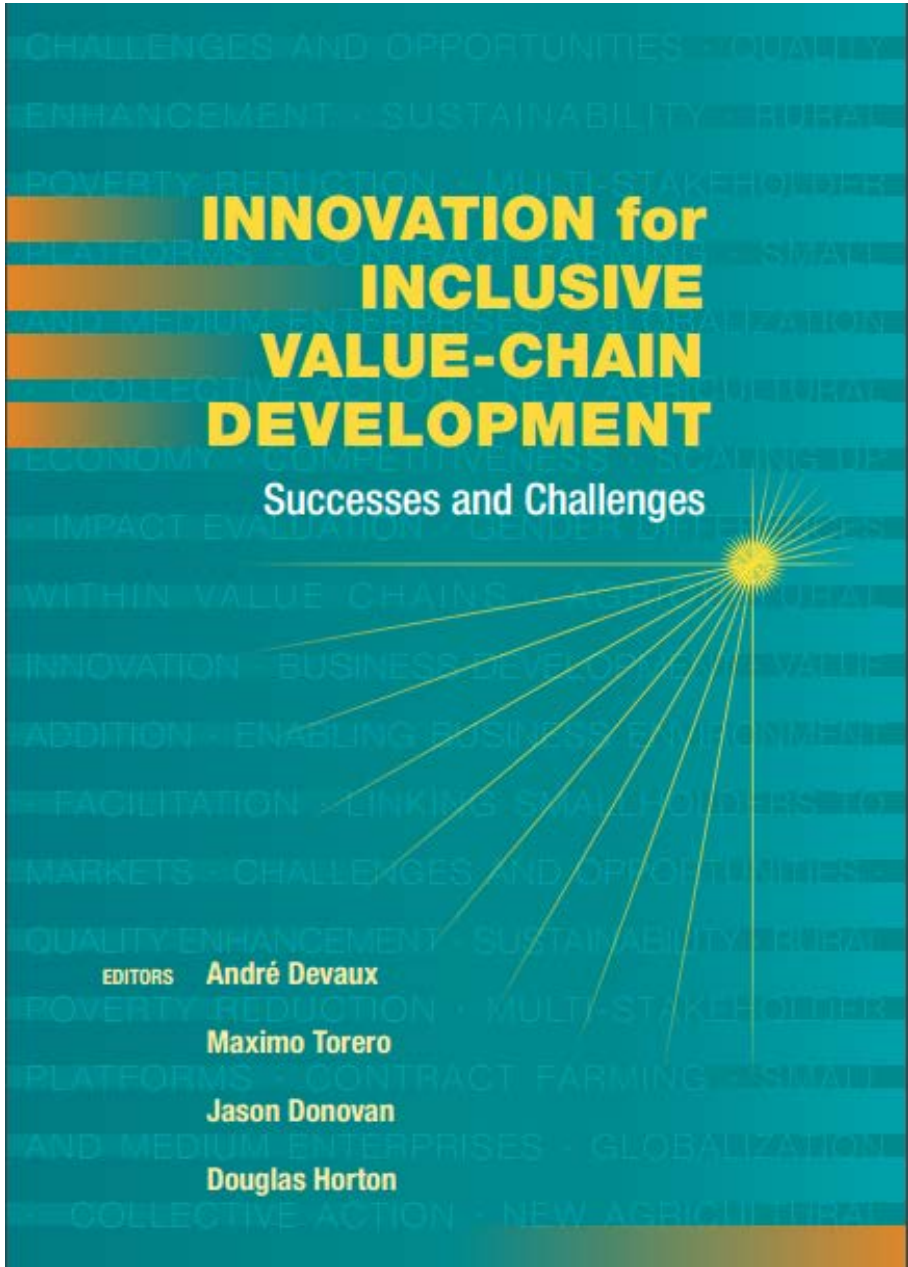
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**INNOVATION for
INCLUSIVE
VALUE-CHAIN
DEVELOPMENT**

Successes and Challenges

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