

# Markets for quality of food crops in Ethiopia: Updates on a research agenda

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## Quality issue in smallholder agriculture

For domestic small-scale farmers to feed growing urban middle class in low-income countries, they must supply higher quality food products.

Whether small farmers are able to compete with food imports depends on their capacity to participate to these markets for higher quality.

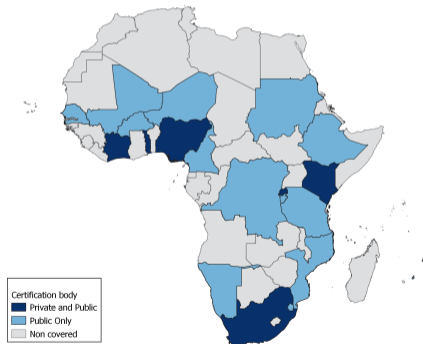
Existing evidence suggests a quality trap for smallholder agriculture in low-income countries, fueled by:

- heterogeneous and unobserved quality
- high costs of quality measurements at small-scale farmer level
- unequal gains from transparency across actors of the value chain

# Fixing markets for quality through third party certification (TPC)

- TPC to fix "Markets for Lemons" (Akerlof (1970), Viscuzi(1978))
- 4 conditions for effective functioning of TPC for smallholder farmers:
  1. Downstream agents are willing to pay for higher quality products
  2. Farmers are capable to increase quality of products
  3. Farmers are willing to pay for TPC services
  4. Farmers are rewarded for the supply of certified higher quality products (cf pass-through)

While TPC exist for most crops and in most countries, they do not serve smallholder farmers, for lack of information, prohibitive costs and limited geographic coverage



# TPC in Ethiopia: Team, Partners, and Resources

## - Team

Banawe ANISSA - WUR (PhD)  
Gashaw ABATE - IFPRI  
Tanguy BERNARD - BSE  
Erwin BULTE - WUR  
Alain DE JANVRY - UC Berkeley  
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Carly TRACHTMAN - UCB (PhD) →  
IFPRI

## - Partners

- Digital Green - Ethiopia
- GreenPact - Ethiopia
- Ethiopian wheat millers association

## - Funding

- CGIAR: Policies, Institutions, and Markets CRP
- CGIAR: Rethinking Food Markets Initiative
- BMGF: Agricultural Technology Adoption Initiative (ATAI)
- French National Research Agency

## TPC in Ethiopia, on-going research agenda

- [1] G. T. ABATE AND T. BERNARD, *Farmers' quality assessment of their crops and its impact on commercialization behavior: A field experiment in Ethiopia*, vol. 1624, Intl Food Policy Res Inst, 2017.
- [2] G. T. ABATE, T. BERNARD, E. BULTE, J. D. N. MIGUEL, AND E. SADOULET, *Buyers' response to third-party quality certification: Theory and evidence from Ethiopian wheat traders*, Intl Food Policy Res Inst, 2024.
- [3] G. T. ABATE, T. BERNARD, A. DE JANVRY, E. SADOULET, AND C. TRACHTMAN, *Introducing quality certification in staple food markets in Sub-Saharan Africa: Four conditions for successful implementation*, *Food Policy*, 105 (2021), pp. 102–173.
- [4] B. P. ANISSA, G. ABATE, T. BERNARD, AND E. BULTE, *Is the local wheat market a 'market for lemons'? Certifying the supply of individual wheat farmers in Ethiopia*, *European Review of Agricultural Economics*, 48 (2021), pp. 1162–1186.
- [5] E. BULTE, J. DO NASCIMENTO MIGUEL, AND B. P. ANISSA, *Competition on agricultural markets and quality of smallholder supply: The role of relational contracting and input provision by traders*, *Economic Development and Cultural Change*, 72 (2024), pp. 603–632.
- [6] J. DO NASCIMENTO MIGUEL, *Returns to quality in rural agricultural markets: Evidence from wheat markets in ethiopia*, *Journal of Development Economics*, 171 (2024), p. 103336.

# Context: quality along the wheat value chain in Ethiopia

- Farmers:
  - Very small scale: median transaction = 50kg
  - Limited use of quality-improving inputs and practices
- Traders:
  - Weakly reward quality
    - Price based on weight and observable quality
  - Aggregate wheat and sell to millers
    - 5 tons truck ( $\approx$  100 farmers) - price based on average truckload quality (incl. unobservable)
- Markets:
  - Heterogeneous in size, quality, actors...

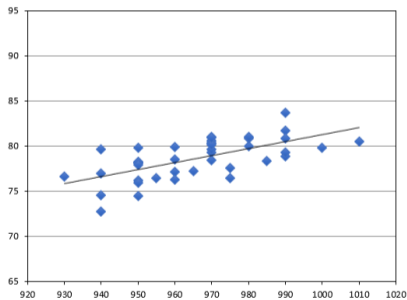


# Context: quality along the wheat value chain in Ethiopia

Unobservable quality parameter: Test-weight  $\approx$  flour extraction rate

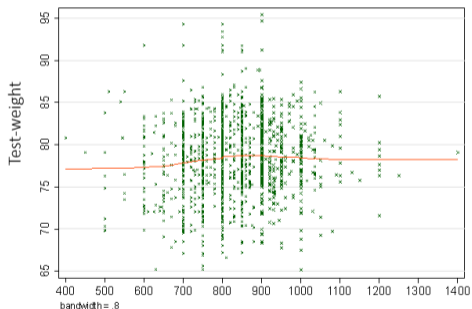
Millers: 6 % price premium

Price per quintal paid by miller to traders



Traders: no premium

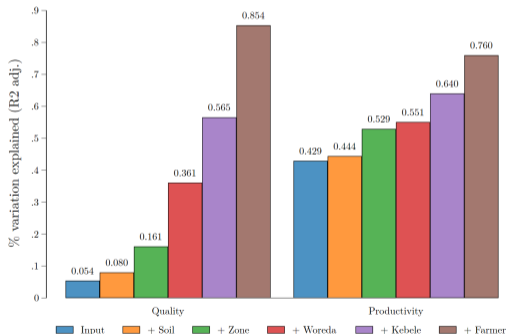
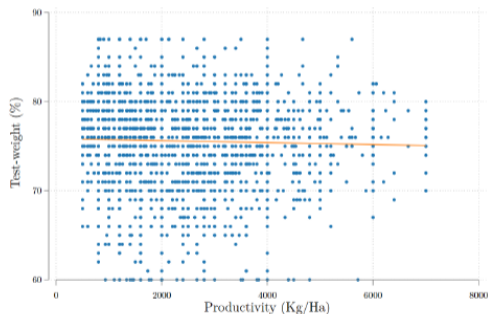
Price per quintal paid by traders to farmers



# Quality at farmers' level

No clear link with yields

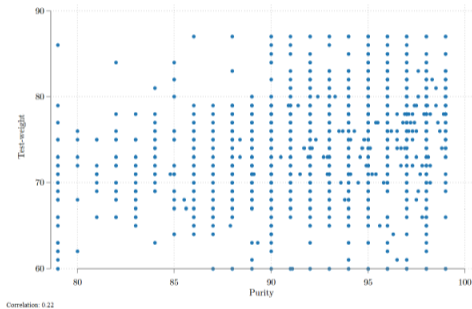
Largely depends on local conditions and farmers' behavior



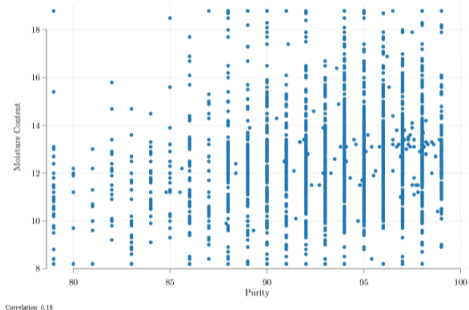


# Quality at farmers' level

Non-observable quality poorly related to observable attributes



A. Test weight and Purity content



B. Moisture content and Purity content

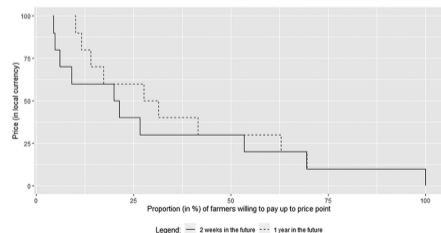
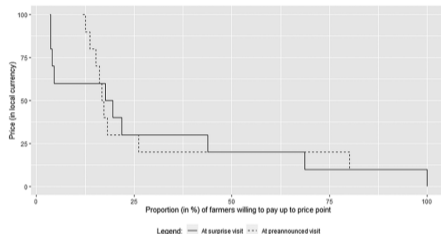
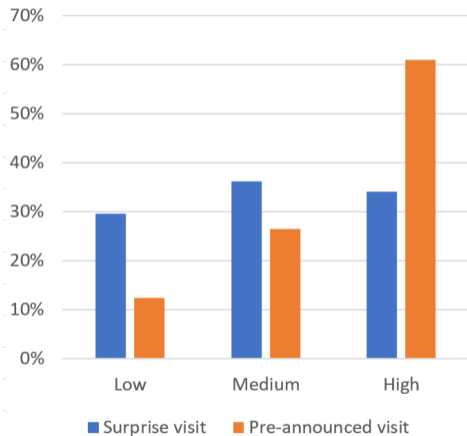
## Quality at farmers' level

Farmers are only partly aware of the quality of their products

<b>Prediction</b>	<b>Subjective quality</b>			<b>Total</b>
	High	Medium	Low	
Accurate estimation %	48.1	16.7	42.6	28.3
Under estimation %	0.0	36.6	51.5	25.8
Over estimation %	51.9	46.7	5.9	45.9
Total %	100.0	100.0	100.0	100.0

# Quality at farmers' level

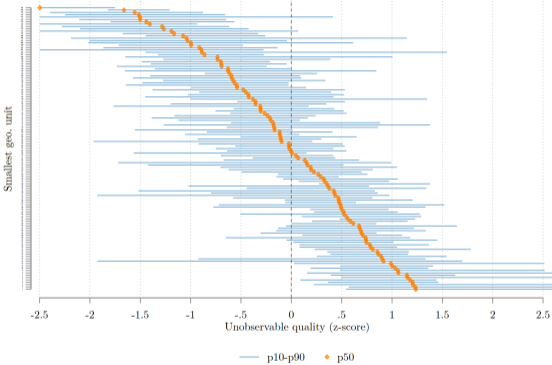
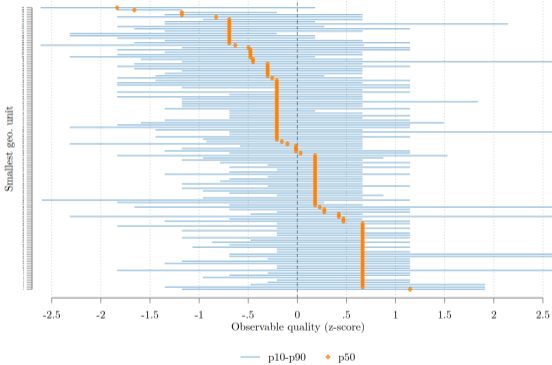
Clear demand for quality certification and strong quality response



## TPC: lessons from a failed field experiment

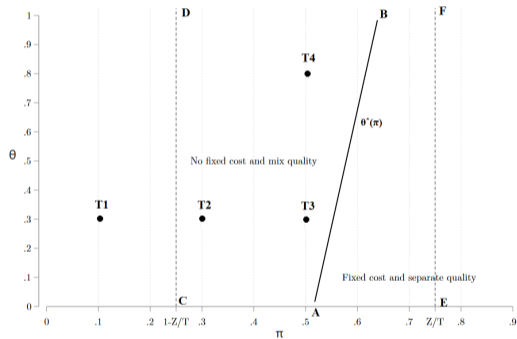
- 2020: pilot intervention of TPC services in over 80 Ethiopian wheat markets.
  - Observation: despite clear benefits for all actors, not sustained
    - Downstream: Large demand of certified wheat by millers
    - Upstream: Significant demand of TPC services by farmers
    - Midstream: Limited uptake of certification information by traders in between (mix certified/uncertified, no clear reward for quality)
  - Follow-up interviews
    - Traders:
      - Purchase and sales of certified units involve fixed-costs (ex-ante)
      - Only worthwhile for trader if expect large supply of certified wheat from farmers
    - Farmers
      - Worthwhile to produce and certify quality if expect traders will value quality-certified wheat
- A possible coordination issue

# Quality at Market level

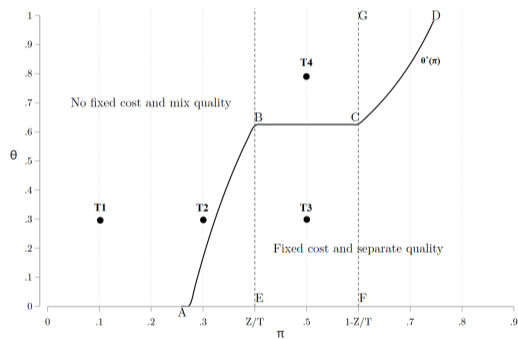


# TPC: Addressing traders' expectations

## Small markets



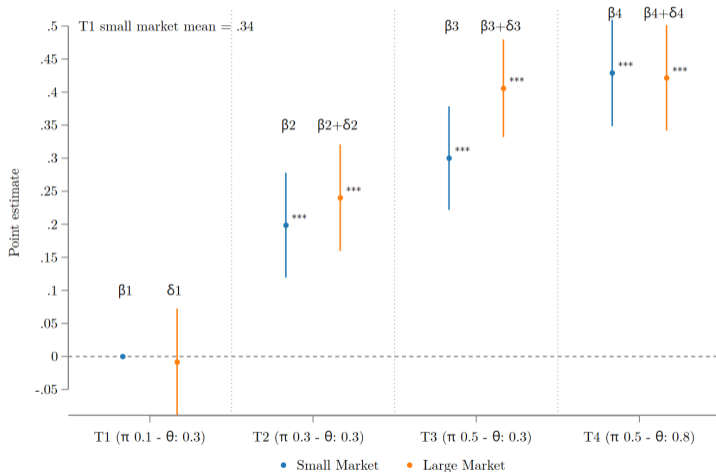
## Large markets



$$\Delta = f(T^+ | \pi, \theta)$$

# TPC: Addressing traders' expectations

## LFE with 180 rural wheat traders in Ethiopia: results



# Next steps

## Coordination issues

- Vertical coordination along the value chain
  - Political economy of quality uncertainty
  - Market-Power issues at various levels (Bernard and Giraud-Héraud, 2023)
- Horizontal coordination between farmers
  - Promote homogeneous quality at local-level
  - Investigate small-group coordination potential
  - Link with minimum size contracting for quality