

The Effects of Farmers' Organizations on the Technical Performance of Grain Producers in Ethiopia

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What is teff?

- Teff is an ancient Ethiopia cereal/grain.
- The smallest grain in the world (about 100 grains are the size of a kernel of wheat!).
- The germ and bran, where the nutrients are concentrated, account for a larger volume of the seed compared to more familiar grains.
- Comes in super-white, white, red and mixed colours.
- World's next 'super-food' and it is getting international attention (The Guardian, 2014).
- Naturally gluten-free.

Teff



Motivation

Ethiopian government wants to double teff production by 2015

- Food security
- Trade and competitiveness

Mechanisms

- Technology adoptions
- Increase in scale of operation
- Improvement in efficiency or management of technology

Institutions/organizations

- Investment in road construction, R&D
- Cooperatives, community groups, and extension

Short History of Co-operatives in Ethiopia

Traditional Co-operative Associations¹

- *Iqub*: mobilize resources, especially finance, and distributing it to members on rotating basis.
- *Idir*: provide social and economic insurance for the members in the events of death, accident, damages to property, among others.
- *Jigie/Wonfel*: labour resource mobilization to overcome seasonal labour peaks.

Formal Cooperatives

- Cooperative Directive enacted - Directive No.44/1960
 - Proclamation No.241/1966
 - Proclamation No.138/1978
 - Proclamation No. 85/1995
 - Proclamation No. 147/1998
 - Amendment Act No. 402/2004

¹This section draws from Emana.B. 2009. Cooperatives: a path to economic and social empowerment in Ethiopia. CoopAFRICA Working Paper No.9, ILO

Cooperative Development Programme

Federal and Regional Governments

- realize the contribution of cooperatives to economic and social development, food security and poverty reduction in Ethiopia.

District Level - Local grassroots level

- lack of awareness about the role of cooperatives in economic and social development
- lack of awareness regarding cooperative law

Coop Statistics

	2005	2007
Primary Coops	19,147	24,167
Members	3,911,834	4,668,564
Unions of Coops	91	143

Coop Statistics

Types of Ag Coop	Number
Multipurpose farmers	6851
Livestock production	256
Milk production and marketing	180
Irrigation	816
Urban agriculture	93
Livestock marketing	585
Coffee production and marketing	48
Abettor service	8
Chat marketing	47
Vegetables and fruits	53
Sugar cane	12
Grain and seed productions	36

Research questions

- Does co-operative membership have effect on technical efficiency of teff producers?
- Does proximity to agricultural co-operatives have effect on technical efficiency of teff producers?
- Does participation in teff producer community meetings (*producer club*) have effect on technical efficiency of teff producers?

Data

- Survey of teff (grain) producers in major producing areas: 1,200 teff farmers were selected, 240 farmers per zone (*i.e.*, East Gojjam, West Gojjam, East Shoa, West Shoa, South West Shoa)
- Teff inputs (e.g., seed, fertilizer) and output
- Plot and farmer characteristics
 - membership in farmer organizations
 - participation in extension services
 - proximity to markets/ coops

Method: Stochastic Frontier

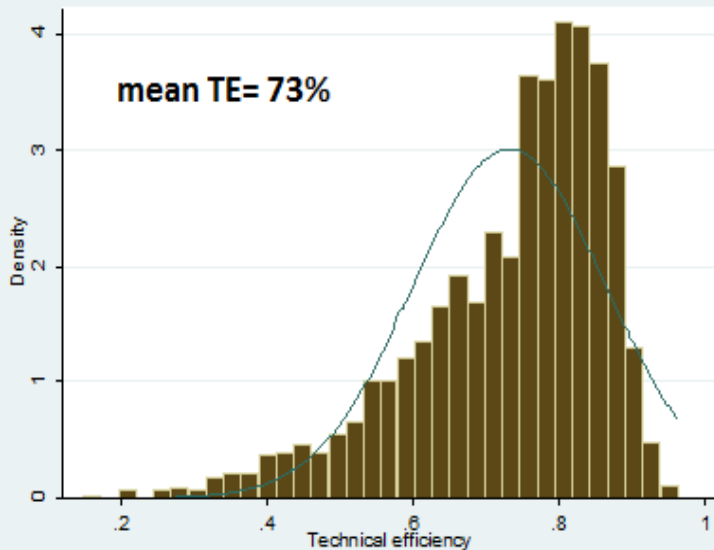
Technical efficiency is measured using stochastic frontier: a measure of best management practice for a given technology

$$y_{ij} = a + \sum_{k=1}^K \beta_k \ln(x_{kij}) + \theta_t + v_{ij} - u_{ij} \quad (1)$$

Descriptive Statistics

Variable	Average
Co-op member	0.64
Community group meetings	0.69
Distance from Co-op	0.99
Extension	0.77
NGO- Extension	0.04
Model farmers	0.39
Mobile phone usage	0.36
household head age	45.46
Plots managed by Male	0.70
Plots managed by Female	0.02
Plots manage by Male and Female	0.28
Household size	10.77

Technical Efficiency Distributions



Farmer organizations and Efficiency

	member	Non-member	Difference
Coop membership	73.6%	72.9%	0.7%
Community group	74.5%	70.6%	3.9%
Extension	74.4%	69.7%	4.7%

Main regression results

- Co-op membership (n/s)
- Proximity to agricultural co-ops (+)
- **Producer Club**: participation in teff related community meetings (+)
- Plots managed by female (−)
- Being a model farmer (+)
- The use of improved varieties (+)
- Extension services (+)

Major findings

- Potential gains from improvement in productivity
- On average, Teff land productivity is 10% higher for improved variety
- Gains from efficiency of resource management is also important, on average, approximately 25% inefficiency
- Farm community discussion groups - clubs - have important implication for improvement in productivity
- Proximity to agricultural co-operatives enhance productivity

Take-home message

- Enhancing timely access to improved seeds and chemical fertilizer in land productivity
 - efforts to scale up promising agricultural technologies
- Providing technical support on best management practices of the existing production technologies or processes
- Providing access to co-operatives' services
- Encouraging the formation and providing support for farm community discussion groups- producer clubs
- Continued investment in R&D, road and other communication infrastructures
- Targeting women in community discussions as well as extension and that closing the gender gap might lead to important teff productivity increases