Commercialization of Smallholder Agriculture in Coffee and Tef Growing Areas of Ethiopia

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Aim of the Study

- The study is an empirical component of the preceding presentations. It had two objectives:
  - to generate information on three key questions related to:
    - the scale of smallholder commercialization
    - the factors that trigger/constrain commercialization (hh-level)
    - impacts of commercialization (hh-level) - on productivity, food consumption and employment of smallholders.
  - **To draw implications of the findings for policy and institutions working on the future of Ethiopian small-scale agriculture.**

Data and methodology

- The study followed a commodity approach. Two commodities from smallholder sector (Tef and coffee).
- Study areas
  - Four Tef dominated weredas (from Amhara and Oromia regions) and
  - Four Coffee weredas (from Oromia and SNNPR).
- The research was based on data collected from household survey conducted in 2006.
- About 320 households were selected randomly for the study.
- Both descriptive and econometric methods (regression models) were employed.

Results

- Scale of commercialization *(proportion of marketed outputs)*

	Tef areas	National average	Coffee areas
Marketed output	**50%**	**35%** (EEA,2006)	**84%**
% of farmers			
- sold more (50%+)	38%	31%	86%
- sold 100%	5%		10%
- consumed 100%	7%		4%

- Despite a high degree of market orientation, the size of market (per seller) is very thin

- % sold 2000 Br or less	57%/933 Br	53%/586 Br
- % sold 3500 Br or more	23%/7796 Br	32%/8971 Br

Specialization and diversification coexist

	Coffee areas	Tef areas	National
% of income from crop agriculture	90%	87%	76%
- Number of crops/farm	5	4	
- Coffee/Tef area coverage (%)	53%	61%	
- Farm size (ha)	1.2 ha	2.3 ha	
- Coffee/Tef growers	75%	88%	
- Contribution of coffee/tef to crop income			
- average farmer	70%	72%	
- top 25% farmers	96%	100%	
- bottom 25% farmers	37%	56%	

Production, Sale and commercialization

- Production is the singles most important factor limiting the size/volume of sale of smallholders.
  - In tef areas, production explained 72% of the variation in trade among sampled households, and in coffee areas 63% of the variation.
  - A unit increase in production (in value terms) could bring 0.75 increase in earnings from trade in coffee areas, and 0.81 in tef areas.

Which factors contributed for commercialization?

- Surveyed households operated at different level of degree of agricultural commercialization.
- Most hh and demographic factors including the size of farm were important in tef growing areas,

	Tef areas	Coffee areas
Young farmers	high	neutral
HHs having female heads	low	neutral
HHs having more family	low	low
Having more land	high (+41% more)	neutral
Renting more land	high (+33% more)	--
Highly specialized	high (17% more)	high

(differences (F-tests) are statistically significant)

- Household coffee commercialization was also affected by:
  - land productivity in non-coffee crops (negatively),
  - total value of outputs produced on a farm (positively),
  - participation in credit market (negatively)
  - the degree of participation in credit market (positively)
  - household labor size had a negative & significant effect on coffee commercialization.
    - this could explain that current farm size could be too small to provide full employment to available labor.

      (i.e. hh labor supply could exceed its demand and that raise consumption more than production or trade).

Household-level spillover effect of commercialization?

- It is measured using a two-stage OLS estimation/model was used to determine the effects of coffee commercialization on productivity of non-coffee crops and hh food consumption.

- The household coffee commercialization index function is

$$(1)\quad C_i = a_0 + a_1 X_i + u_i \quad (i=1, \ldots..,140 \text{ households})$$

- and the productivity of non-coffee crops function is:

$$(2)\quad Y_i = b_0 + b_1 X_i + b_2 C_i + v_i$$

- and the consumption of food consumption

$$(3)\quad Z_i = d_0 + d_1 X_i + d_2 C_i + w_i$$

- Household coffee commercialization index (C_i), an endogenous variable, measured the spillover effect of C_i on productivity of non-coffee crops and household food consumption, which used as independent variable.

- Regression result from equation 2 highlights the lack of complementarity between coffee commercialization and productivity in non-coffee (largely maize and *enset*) crops at **household level**.
  - In fact the relationship is negative and significant at 10%. Each additional percentage increase in the coffee commercialization index was associated with a 44 Birr per hectare (or about 3% of mean productivity levels) decline in the value of non-coffee crops production per hectare.
- Similarly, farmers' productivity in non-coffee crops declined as the proportion of land they allocated to coffee increased.

- In equation 3, the coefficient of the degree of household coffee commercialization was found insignificant.
  - This tells us the lack of evidence on the hypothesizes that household coffee commercialization has negative effects on smallholders' welfare (food consumption), though the evidence emerged from data collected in good coffee year.

Policy implications

- The emerging picture indicates the benefits of further agricultural commercialization in the study areas.
- Agricultural commercialization should be considered as one strategy to improve rural urban linkages through
  - forward linkage – providing inputs to agro-industries (though this has been increasingly threatened by supply and price problems caused by the export-oriented agricultural policy adopted recently),
  - backward linkage – becoming markets for domestic industries like firms producing cloth and shoe (this has also been threatened by the Chinese cheap/or subsidized imports).

- **In coffee areas**

- From the long-term perspective, specialization in coffee is recommendable i.e. increased commercialization. The challenge for policy makers is to
  - create reliable food markets and
  - improve or stabilize the term of trade between coffee and food crops, and
  - creation of some kind of insurance against a sudden drop in world coffee price.

In tef areas

Agricultural commercialization can be enhanced through:

- further specialization in tef production,
- expanding the average farm size through:
  - expansion of non-farm employments,
  - encouraging migration, among others by allowing freely operated unrestricted land rental markets,
  - increase the economic value or productivity of a unit farm,
    - expansion of irrigation,
    - competitive land rental markets,
    - expanding the use of modern farm inputs including fertilizers and improved seeds, are important.

Policy implications (for both study areas)

- Ethiopia's ongoing effort to redress the problems of the 1974 land policy should go beyond addressing the issue of tenure insecurity. It should address problems that contribute for the shrinking of the average farm size, discourage long-term migration and the operation of free land markets.
- Result implies the need for having special support program for female-headed households so that any commercialization program will not abandon them.
- Family planning should also considered as a long-term strategy of facilitating the commercialization of smallholder agriculture.