THE ROLE OF LAND CERTIFICATION IN DISSIPATING GENDER GAPS IN PRODUCTIVITY IN RURAL ETHIOPIA

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INTRODUCTION

- Motivation: Progressive land reforms in Africa (since the 1990s) have made explicit attempts to strengthen women's land rights.
- There have been only very limited attempts that assess the welfare implications of these changes in land tenure systems on women (exceptions: e.g. Holden et al., 2010).
- The main question of the paper: What is the impact of the Land Certification program in terms of improving the productivity of female-owned land?

BACKGROUND

- Tenure systems and women in Africa
  - Since the 1990s, most African countries have passed several new land legislations to remedy some of the perceived shortcomings of existing systems, particularly by strengthening customary land rights, recognizing occupancy short of full title, improving female land ownership, and decentralizing land administration.
  - Beneficial to female headed households, given women's restricted rights to property across Africa, (Okali, 1983; Goheen, 1988; Derman et al., 2007; Dey, 1981; and Yngstrom, 2002; Crummy, 2000),

BACKGROUND (CONTD.)

- Women and land productivity
  - Gender gaps in agricultural productivity have been documented by many studies across the developing world (Holden et al. (2001); (Sridhar, 2008). Quisumbing (1996) ; (Udry, 1996) ; Tikabo (2003); Agarwal, (2003) and Cook (1999)).
- To what extent land reforms translate into tangible welfare gains (in terms of productivity) is of high policy relevance in light of this.

BACKGROUND (CONTD.)

- The broader literature on rural land security provides strong evidence that in many cases secure tenure improves the livelihoods of the rural poor through, increased investment, land market participation, and productivity (Besley 1995; Sjaastad and Bromley 1997; Holden and Yohannes, 2002; Deininger and Jin 2006).
- However, land tenure systems in many developing countries are characterized by rigidities, and highly intertwined with the socio-cultural settings leaving huge rooms to efficient reforms (Nega et al., 2003).

BACKGROUND (CONTD.)

- Implication: To the extent that land reforms fully restore tenure security, the investment, exchange, and productivity benefits of secure land rights are guaranteed.
- the empirical evidence on impacts of land reforms :mixed.
- Positive: Holden et al. (2009a) ; Jacoby and Jin (2001); Deininger et al. (2009).
- Negative/no effect: (Place and Migot-Adholla, 1998; Jacoby and Minten (2005) Besley and Burgess, 2000; Cotula, et al., 2004; Deininger et al., 2003).

IMPLICATIONS

- These findings indicate that the impact of a particular reform could be dependent on the features of the reform.
- Hence the impact of the land certification in Ethiopia on enhancing the productivity of female headed households should investigated on its own merits.
- Accordingly, this paper investigates into the impact of land certification in closing the gender gaps in the productivity of male and female headed households in Ethiopia.

MOTIVATION AND CONTRIBUTIONS

- Analysing the impact of the land certification in reducing gender gaps in productivity is of interest:
  - Enables testing the improvement in productivity as a result of enhanced tenure security
  - Program impacts are rarely assessed in terms of improving the economic performance of rural women
  - Previous literature on the economic impacts of land reforms shows such reforms yield mixed results

THE LAND CERTIFICATION PROGRAM IN ETHIOPIA

- The certification program is an innovative approach :
- its features attempt to accomodate the equity, tenure security and economic efficiency problems of the existing tenure system in Ethiopia.
- Low cost and participatory implementation

HYPOTHESIS

- two ways by which land certification could be for women.
  - Increased tenure security could increase land-related investment.
  - encourages participation in the land rental market, which typically involves land transfer to more efficient operators.

OBJECTIVES

- the main objective of this paper is to assess productivity differentials between male and female households and to look into the possibility of land certification significantly reducing the productivity gaps.

DATA

- The data source employed in this analysis is the Sustainable Land Management Survey conducted in the years 2005 and 2007 in two Zones in the Amhara National Regional State of Ethiopia.
- A total of 14 villages were included in the study, seven from the East Gojjam Zone and the other seven from the South Wollo Zone, with a former being higher in terms of agricultural potential than the latter.
- Information on about 11094 plots is used in the analysis, out of which 2075 are rented out plots.

ECONOMETRIC ANALYSIS

- Difference-in-difference approach : compares the patterns of productivity among the sample plots before and after the certification.
- DID: to study the impact of some ‘treatment,’ one compares the performance of the treatment group pre- and post-treatment relative to the performance of some control group pre- and post-treatment.
- In principle, the control group shows what would have happened to the treatment group in the absence of any treatment.

ECONOMETRIC ANALYSIS (CONTD.)

- We compare the level of productivity among certificate receiving plots pre and post certification with the productivity pattern among control plots pre- and post-certification.
- Following Deininger et al. (2009) we select treatment plots as plots within villages which receive certification in the year 2005 and control plots which did not receive certification prior to or in 2005.

ECONOMETRIC MODEL

- Pooled productivity analysis

$$Y_{ip} = \alpha + \beta L_{ip} + \gamma W_{ip} + \mu T_{ip} + \eta_{ip}$$

- Productivity by gender category

$$Y_{ip} = \alpha + \beta L_{ip} + \gamma W_{ip} + \mu T_{ip} + \eta_{ip} \; if \; gender = female$$

$$Y_{ip} = \alpha + \beta L_{ip} + \gamma W_{ip} + \mu T_{ip} + \eta_{ip} \; if \; gender = male$$

ECONOMETRIC MODEL (CONTD.)

- Productivity analysis by rental status

$$Y_{ip} = \alpha + \beta L_{ip} + \gamma W_{ip} + \mu T_{ip} + \eta_{ip} \ \ if \ \ rentedout \ \ = 1$$

$$Y_{ip} = \alpha + \beta L_{ip} + \gamma W_{ip} + \mu T_{ip} + \eta_{ip} \ \ if \ \ rentedout \ \ = 0$$

- Plot selection equation

$$L_{pit} = \begin{cases} 1 \, if \ \ \beta^P S_{it} + \gamma^P X_{pit} + u_{pit} > 0, \\ 0 \quad otherwise \end{cases}$$

Table 1: The impact of certification on productivity: by gender category

	yield_pooled_no_nfert	yield_fem_no_nfert	yield_male
age	**-0.00521*** **	0.00145	-0.00620***
	(0.00074)	(0.00220)	(0.00080)
sex	**-0.15770*** **		
	(0.04176)		
write	**-0.06705*** **	-0.07778	**-0.07374*** **
	(0.02133)	(0.11430)	(0.02177)
femaleha	-0.04186	-0.07924	-0.04884
	(0.02966)	(0.07893)	(0.03622)
maleha	0.01673	**0.09304** **	0.01650
	(0.01770)	(0.04652)	(0.02027)
femaleha2	**0.00917** *	0.01171	0.00965
	(0.00497)	(0.00948)	(0.00651)
maleha2	0.00195	-0.01065	0.00218
	(0.00177)	(0.00746)	(0.00190)
livestockha	**0.03419*** **	0.00692	**0.03814*** **
	(0.00462)	(0.01263)	(0.00500)
oxha	**-0.02726** **	-0.00396	**-0.03171*** **
	(0.01084)	(0.02623)	(0.01209)
landarea	**-0.11389*** **	**-0.17909*** **	**-0.10745*** **
	(0.01324)	(0.04598)	(0.01432)
ptreatment	**0.14738*** **	**0.19570** *	**0.14134*** **
	(0.03969)	(0.11819)	(0.04132)
treatment	-0.03191	0.00100	-0.03170
	(0.03051)	(0.08910)	(0.03258)
fem_treat	0.07854		
	(0.06657)		
_Iethyear_1999	**-0.29104*** **	**-0.33809*** **	**-0.25088*** **
	(0.03987)	(0.10620)	(0.04882)
Constant	**7.06222*** **	**6.53972*** **	**7.03079*** **
	(0.08648)	(0.27177)	(0.10253)

Table 2: The impact of certification on productivity : by rental status and gender

	Females (1)	Males(1)	Females(0)	Males (0)	Interaction
age	0.00051	**-0.00490**	**0.00113**	**-0.00611**	**-0.00505**
	(0.00408)	(0.00174)***	(0.00262)	(0.00091)***	(0.00074)***
write	0.07206	-0.00696	-0.09124	-0.08776	**-0.06737**
	(0.25987)	(0.04696)	(0.12797)	**(0.02451)*** **	(0.02131)***
femaleha	0.12675	**-0.19933**	-0.06541	-0.02945	-0.04589
	(0.58718)	**(0.10789)***	(0.08664)	(0.03916)	(0.02970)
maleha	0.15909	0.02300	**0.09379**	0.01036	0.02121
	(0.10256)	(0.06703)	(0.05372)*	(0.02220)	(0.01770)
livestockha	0.00457	**0.02267**	0.00843	**0.04174**	**0.03522**
	(0.04043)	(0.01256)*	(0.01361)	(0.00548)***	(0.00462)***
oxha	-0.05339	-0.03960	0.03956	-0.02596	**-0.02105**
	(0.06384)	(0.03160)	(0.03106)	(0.01326)*	(0.01088)*
landarea	-0.24455	**-0.10818**	**-0.13605**	**-0.11296**	**-0.11433**
	(0.23193)	(0.02900)***	(0.04888)***	(0.01656)***	(0.01323)***
ptreatment	-0.16998	-0.00106	**0.33643**	**0.16940**	**0.16135**
	(0.43558)	(0.09303)	(0.14160)**	(0.04622)***	(0.04054)***
treatment	**0.31163**	0.02079	-0.12986	-0.03287	-0.02346
	(0.13952)**	(0.07387)	(0.11725)	(0.03640)	(0.03051)
fem_treat					0.09716
					(0.06693)
_Iethyear_1999	-0.02896	**-0.17299**	**-0.29962**	**-0.28033**	**-0.27339**
	(0.39469)	(0.10004)*	(0.12816)**	(0.05127)***	(0.03996)***
					0.16415
trade1					(0.02840)***
					-0.13095
trade_treat					(0.05812)**
Constant	**7.02541**	**7.26678**	**6.13467**	**7.03685**	**6.99268**

CONCLUSIONS

Major findings:

- significantly lower land productivity on plots of female landlords than on plots of male landlords (in accordance with many previous similar studies)
- Certification has significant and positive impact on productivity.
- Women seem to enjoy slightly higher productivity benefits from certification.
- Certification increases the productivity of non rented plots (?)

POLICY IMPLICATIONS

- Tenure security enhancing land reforms lead to positive welfare (productivity) outcomes as is the case with the Ethiopian rural land certification program.
- Stronger property rights to women are necessary to strengthen women's enhanced land productivity as evidenced by the certification program.
- The certification program does not seem to have significantly enhanced land rentals, at least transfer of land to more efficient tenants.