GENDER, INSTITUTIONS AND SUSTAINABILITY IN THE CONTEXT OF FOREST DECENTRALIZATION REFORMS IN LATIN AMERICA AND EAST AFRICA

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INTRODUCTION

- Women's participation in decision making at the user-group level and in forest committees has been demonstrated to have a positive impact on forest sustainability.
- The research presented in this paper advances our knowledge of how women may influence forest management.
- It explores the different effects on forest management by groups with different male-female composition (i.e., female-dominated, mixed-gender and male-dominated user groups).
- The study investigates each type of group's property rights to forest resources, harvesting preferences, participation in rule making, relative investments in forest management and the outcomes of these activities.
- The research was conducted in four countries in Latin America (Bolivia and Mexico) and East Africa (Kenya and Uganda) and adopts a comparative approach to identify synergies within regions and to create a learning environment that may lead to improved forest management

FOREST DECENTRALIZATION

- Decentralization of forest managements: offer rules related to access, harvesting, and management that are reflective of local needs and knowledge, and thus allow for more efficient monitoring and sanctioning. In addition, local institutions can provide low cost and faster conflict resolution;
- Challenges for decentralization reforms: increasing disadvantages for women, poorer individuals and ethnic minorities.

THE CONTEXT

- Decentralization reforms in all four countries were initiated and begun implementation during the past 15 years:
  - Bolivia: introduced forestry reforms in 1996 that transferred substantial power and resources to local governments, but retained national ownership of all forest resources;
  - Mexico: has decentralized some of its forest governance functions and ownership rights to communities, but has retained more political and financial control at the federal and state levels;
  - Uganda: has implemented forest decentralization reforms since 1996 and has devolved authority to the district level;
  - Kenya: had reform in 2005 to devolve authority to community associations but with responsibility in nested hierarchies that overlap both governance levels

AN EMPIRICAL ANALYSIS

Property rights to harvest and actual amounts harvested

Table 1A: Property rights to harvest

Explanatory Variables	Property rights (Probit)							
	Right for trees		Right for bushes		Right for soil&stone		Right for wildlife	
	M.E.	t Stat.	M.E.	t Stat.	M.E.	t Stat.	M.E.	t Stat.
Mixed gender group (base is male-dominant)	0.01	0.11	0.11	1.00	-0.01	-0.05	0.01227	0.16
Female dominant (base is male-dominant)	0.33	2.93***	0.32	3.12***	-0.09	-0.62	-0.02595	-0.36
Decentralization (dummy, 1=yes, 0=no)	0.24	1.26	0.36	2.72***	0.22	1.00	0.30477	1.80**

Table 1B: Actual amounts harvested

Explanatory Variables	Harvested from forest (OLS)			
	Fuelwood		Timber	
	M.E.	t Stat.	M.E.	t Stat.
Mixed gender group (base is male-dominant)	5.39	0.69	3.17	0.35
Female dominant (base is male-dominant)	26.19	4.45***	-15.26	(-1.73)*
Decentralization (dummy, 1=yes, 0=no)	-27.12	(-2.56)**	-17.70	-1.34

- Gender composition affects the user groups' rights to harvest and actual amounts harvested, with female-dominant groups tending to hold rights to harvest trees and bushes, and to collect more fuelwood and less timber;
- While decentralization expands user groups' right to harvest, it negatively influences the amount the user groups actually harvest from the forest.

Investment activities

Table 2: User' group's investment by region

Investment	Average		Male		Mixed		Female	
	Total obs.	(prop.)	Obs.	(prop.)	Obs.	(prop.)	Obs.	prop.)
Regeneration activity								
Average	290	24%	117	20%	106	**37%***	67	13%
Africa	208	9%	98	6%	47	13%	63	10%
Latin America	82	65%	19	89%*	59	56%	4	75%
Improvement activity								
Average	290	27%	117	23%	106	**35%***	67	21%
Africa	208	21%	98	18%	47	28%	63	19%
Latin America	82	43%	19	47%*	59	41%	4	50%

- we do not detect any significant impact from gender factors in the regression;
- User groups in Latin America are more likely to adopt investment activities than user groups in East Africa (Table 2);
- For each gender group, user groups in the Latin America invest more than the ones in Africa, so the regional differences are much dominant than gender differences.

Management and decision making

Table 3A: Management activities and decision making

Explanatory Variables	Management			
	Participation		Monitoring & sanctioning	
	M.E.	t Stat.	M.E.	t Stat.
Mixed gender group (base is male-dominant)	0.20	2.61***	0.05	0.70
Female dominant (base is male-dominant)	0.02	0.67	-0.11	(-1.62)*
Decentralization (dummy, 1=yes, 0=no)	0.70	2.55**	0.43	2.26**

Table 3B: Outcomes

Explanatory Variables	Outcome	
	Other groups harvesting	
	M.E.	t Stat.
Mixed gender group (base is male-dominant)	-0.02	(-1.61)*
Female dominant (base is male-dominant)	0.00	0.24
Decentralization (dummy, 1=yes, 0=no)	-0.01	-0.45

- Mixed-gender groups are more likely to participate in rule making than male-dominated ones Table 3A); mixed groups are also more likely to exclude other groups (Table 3B);
- Female-dominated groups are less likely to participate in monitoring and sanctioning (Table 3A);
- Decentralization reforms increased user groups' participation in forest rule making and monitoring and sanctioning process (Table 3A)

DISCUSSION AND CONCLUSIONS

- Gender composition is important:
  - Female-dominated groups tend to have more property rights to trees and bushes, and collect more fuelwood and less timber than do male-dominated or mixed groups;
  - Mixed-gender groups participate more in forestry decision making and are more likely to exclude other groups from harvesting from the forest;
  - Female-dominated groups invest less, sanction less and exclude less;
- The implementation of decentralization reforms has strengthened user group rights to forest products yet has reduced user groups' actual harvest levels; furthermore, decentralization has encouraged user groups to participate in forest management activities.