Institutions, Collective Choice and Outcomes: The Allocation of Decisionmaking Control in Mexican Agrarian Forestry

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- "Community forestry" responds to separate mandates: internal social relationships and external forces
- "Needs": build capacity in managerial, organizational and technical skills – accountability

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- What is link between allocation of authority and benefits generated from local natural resource management? *Mixed mapping from decisionmaking loci to outcomes.*

Data sources

- Phase 1 forest permit database compiled from 10 states in Mexico
- Phase 2 community level surveys
  - Main survey administered to community authorities
  - Subject specific modules: work groups, parcelized systems, diversification activities, association networks.
  - 41 observations in 2 states: Durango and Michoacan
  - Triangulation: officials, PSTs, case-study follow-up

Sample Statistics

Table: Survey Sample by State

	State				
	Durango		Michoacan		
VI Level	Total	Sample	Total	Sample	Sample
No sale	136	4	143	3	7
Stumpage	140	10	120	6	16
Roundwood	68	9	15	3	12
Lumber	42	5	12	1	6
Total	290	28	147	13	41

Source: Survey data

Table: Internal Organization Types

	Community N=26	Work Group N=5	Parcels N=10
Durango	21	4	3
Michoacan	5	1	7
Formation dates	1962-2001	1992-2000	1929-1998
No sale	4	0	2
Stumpage	11	1	5
Roundwood	6	3	3
Lumber	5	1	0
Past "*maldesempeño*"	8	4	7

Source: Survey data

Sanctioning managers for *maldesempeño*

Sanction	Hypothetical	Actual	Total
No response	9	1	10
Renounce post	8	10	18
Fine	1	2	3
Renounce and fine	0	3	3
State/federal	2	0	2
Other	1	3	4
Renounce + other	0	1	1
Total	21	20	41

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Hypothesis: Division seen as a way to create more transparency and accountability among community managers and leaders.

Structure and process

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Variations explored:

- Across internal production organizational modes (as above)
- Within organizational models - who makes decisions, size of coalitions, (e.g. General Assembly, CBC, Jefe de Vigilancia, group leaders, individuals, foresters, other)

Decisionmaking by internal organization and VI

Table: Statistically Significant Differences

Decision	By internal org?	By VI level?
Profit allocation	Yes	Yes
Trade price	Yes	No
Wage/reparto advance	Yes	No
Harvest volume	No	No
Choice of buyer	Yes	No

Source: Survey data.

Example: Profit Allocation Decision

Table: Who is authorized to make decision?

Production level	Who decides	Percent of responses
Community	General Assembly	62%
	CBC	33%
Work groups	General Assembly	60%
	WG leader	40%
	WG assembly	40%
Parcels	CBC	50%
	Parcel holder	50%
	General Assembly	25%

Source: Survey data.

How Explain Assigned Authority

Modeling approach: Variation in how decisions made

- The marginal value of the decision versus the marginal cost of using a particular method of decisionmaking
- "Selection of Collective Choice Rules" (Zusman 1992)
- Cost also entails risk of not being in winning coalition
- Example: GA has lower risk of "not being in winning coalition", larger costs of reaching a decision.

Table: Decisions made in the GA

	(1) Profit decision Probit	(2) Price decision Probit
(Log) forest ha.	0.44+	0.44+
	(1.81)	(1.77)
Distance to pop. ctr.	-0.71*	-0.24
	(-2.35)	(-0.84)
Wealth hetero.	-0.01	-0.01
	(-0.57)	(-0.48)
Trust (neg.)	-0.32*	-0.10
	(-2.66)	(-1.03)
Constant	2.98	-2.15
	(1.01)	(-0.71)
N	38	38
Pseudo-R2	.36	.16

t-statistics in parentheses: + p<0.10, * p<0.05

Implications of institutions and practices

Link governance characteristics with performance measures.

Outcomes considered

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- **Local public goods:** school, potable water, municipal buildings, church, fiestas, medical services/supplies, grants, pensions, other
- **Reinvestments in forest:** eqmt, market study, forest ecosystem study, soil study management plan, roads, tractors, trucks, and cranes, secondary processing, diversification, other
- **Conservation practices:** Principal component of timber and NTFP contraband, severity, clearing, fire preparedness.

Table: Impact of subcommunity organization

	(1) PG-Range OLS	(2) PG-range OLS	(3) Schools Probit	(4) Range-rein. OLS	(5) Diversify Probit	(6) Diversify Probit	(7) CP OLS
Sub-c div.	-0.14*		-0.45	-0.12	-1.15+		-0.37
	(-2.71)		(-0.55)	(-1.07)	(-1.95)		(-1.42)
Distance	-0.02	-0.01	-0.23	-0.08	-0.76+	-0.78+	0.05
	(-0.68)	(-0.63)	(-0.56)	(-1.55)	(-1.71)	(-1.76)	(0.41)
Fuelwood depend.	0.21+	0.22+	6.92*	1.37*	0.42	0.43	2.01*
	(1.85)	(1.90)	(2.52)	(5.37)	(0.37)	(0.36)	(3.63)
Member density	0.00	0.19	-10.84+	0.18	4.19	6.94	
	(0.01)	(0.44)	(-1.79)	(0.19)	(1.01)	(1.47)	
Parcel		-0.17*				-1.88*	
		(-2.98)				(-2.12)	
Pop. density							-0.31
							(-1.45)
Constant	0.10	0.08	-3.99+	-0.29	-0.26	-0.39	-1.37*
	(0.86)	(0.73)	(-1.95)	(-1.19)	(-0.24)	(-0.35)	(-2.63)
N	35	35	35	35	35	35	28
Adj. R-sq	0.23	0.26		0.56			0.60
Pseudo R-sq			0.66		0.20	0.26	

t-statistics in parentheses: + p<0.10, * p<0.05

Table: Impact of using GA for π-distribution

	(1) Schools Probit	(2) Range-rein. OLS	(3) Cons. prac. OLS
GA forum	1.29*	0.22+	0.44
	(2.74)	(1.92)	(1.68)
Distance		-0.06	0.12
		(-1.22)	(0.99)
Fuelwood		1.11*	1.99*
		(5.12)	(3.87)
Member density		-0.37+	-1.05*
		(-1.87)	(-2.61)
Constant	-0.10	-0.20	-1.76*
	(-0.41)	(-1.25)	(-4.71)
N	41	36	28
Adj. R-sq		0.61	0.65
Pseudo R-sq	0.16		

t-statistics in parentheses: + p<0.10, * p<0.05

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- Outcomes by internal organization and decisionmaking forums mixed.
- If divide: less diversification and less range of public goods investment (future: check for reverse causality due to pre-existing preferences)
- Applying "best practice" models would be problematic given variability and local norms of accountability

Further questions

- What are constraints to accountability mechanisms?
- Are communities and decisionmakers autonomous from external forces?
- Other ways to support exchange in "agrarian forestry" sector at community level?

Inclusion and Exclusion

- Forest rights as means to fulfill citizenship: access to economic resources, political leverage and livelihood strategies.
- Internal institutional changes evident but are there persistent means of exclusion at level of the state?
- Who defines what is forest? Forest reverts to state if community privatizes under the modernization policies; forests object of environmental policy.
- Environmental policy decisionmaking: policy often not decided at community level.