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Mexican Community Forests:
A brief history

Revolution & Reform (1910s-30s)

Emiliano Zapata

Lázaro Cárdenas

Mexican Community Forests: A brief history

Concessions from State (1940s-70s)

Mexican Community Forests: A brief history

Autonomy & Governance (1980s-2000s)

© Holger Motzkau 2010, Wikipedia/Wikimedia Commons

Elinor Ostrom

Mexican Community Forests:
A brief history

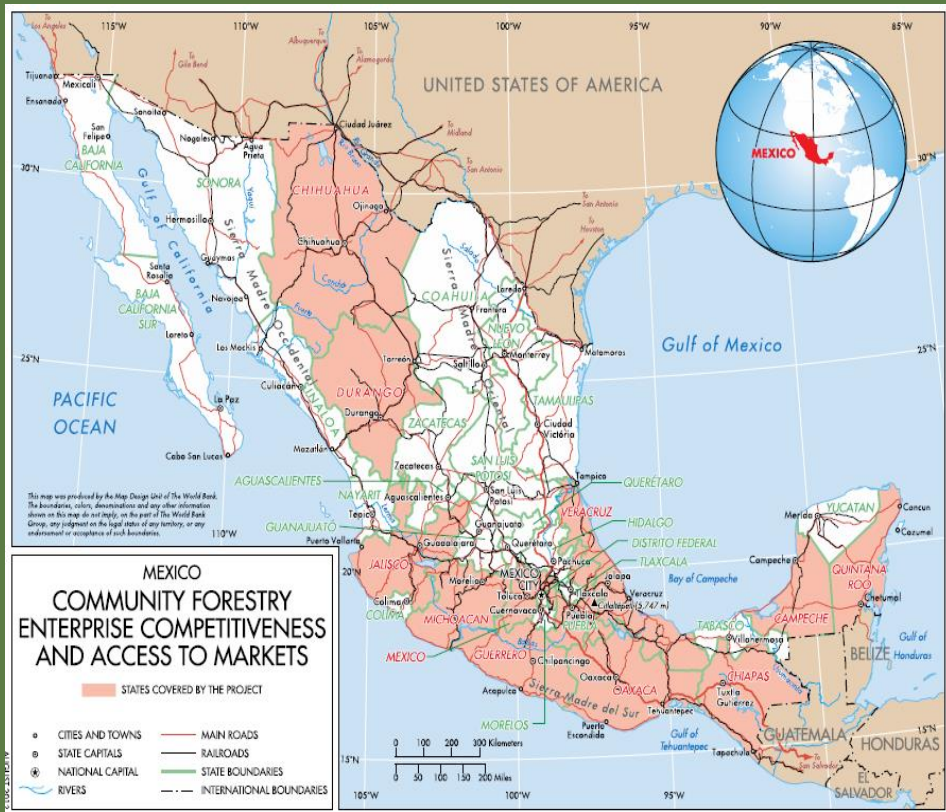Community Forest Enterprise Economic Efficiency

Methods

Methods

- <u>Data</u> – Survey 30 CFEs in 12 states

- <u>Base year 2011</u>

- <u>Financial calculations</u>

Cubbage, F., Davis, R., Frey, G., & Behr, D. C. (2013a). Financial and economic evaluation guidelines for community forestry projects in Latin America. Washington, DC: PROFOR, World Bank.
Cubbage, F., Davis, R., Rodríguez Paredes, D., Frey, G., Mollenhauer, R., Kraus Elsin, Y., . . . Chemor Salas, D. N. (2013b). Competitividad y Acceso a Mercados de Empresas Forestales Comunitarias en México. Washington, DC: PROFOR, World Bank.

Results
Forest Management Profits and Sustainability

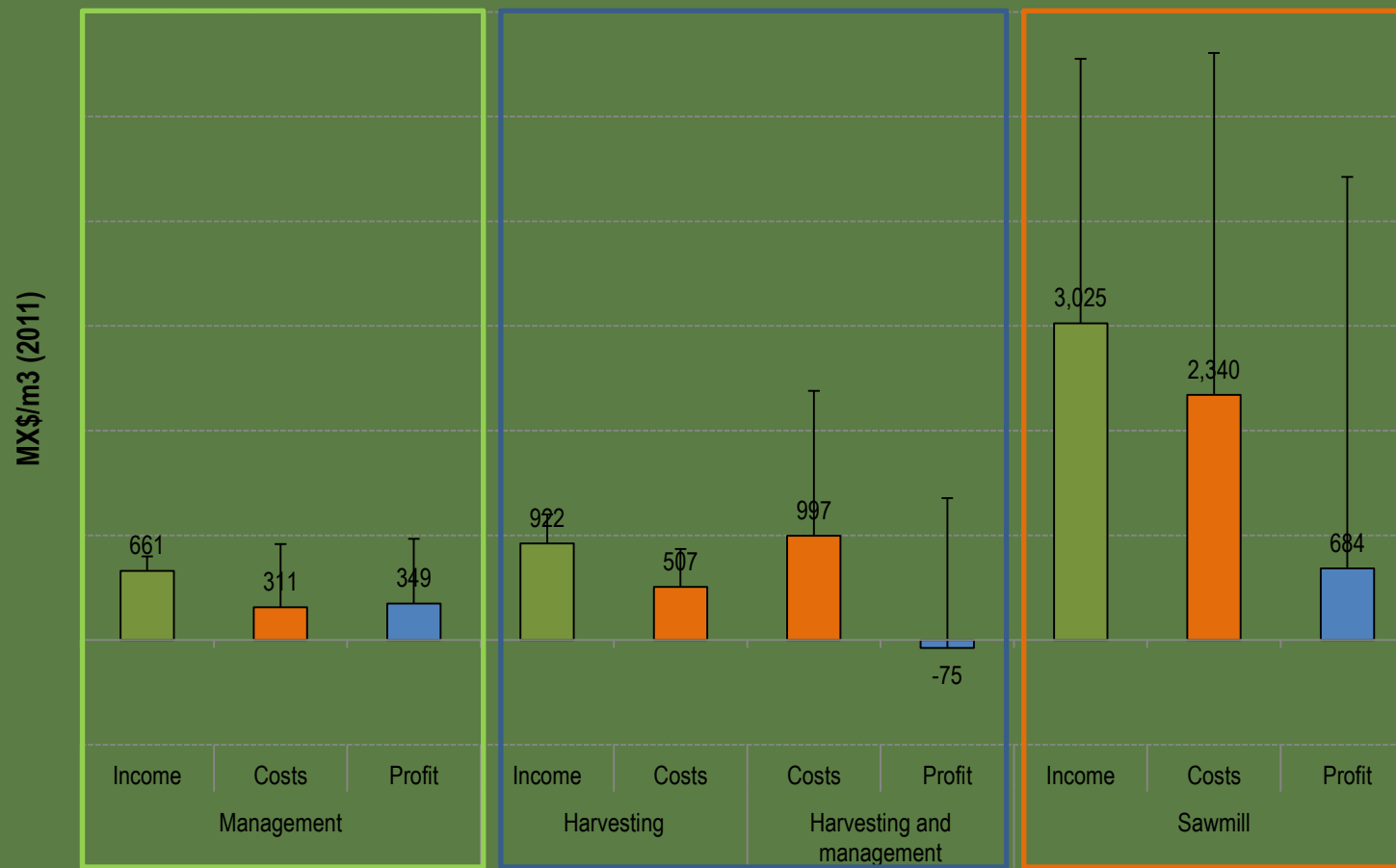NPV for 30 years
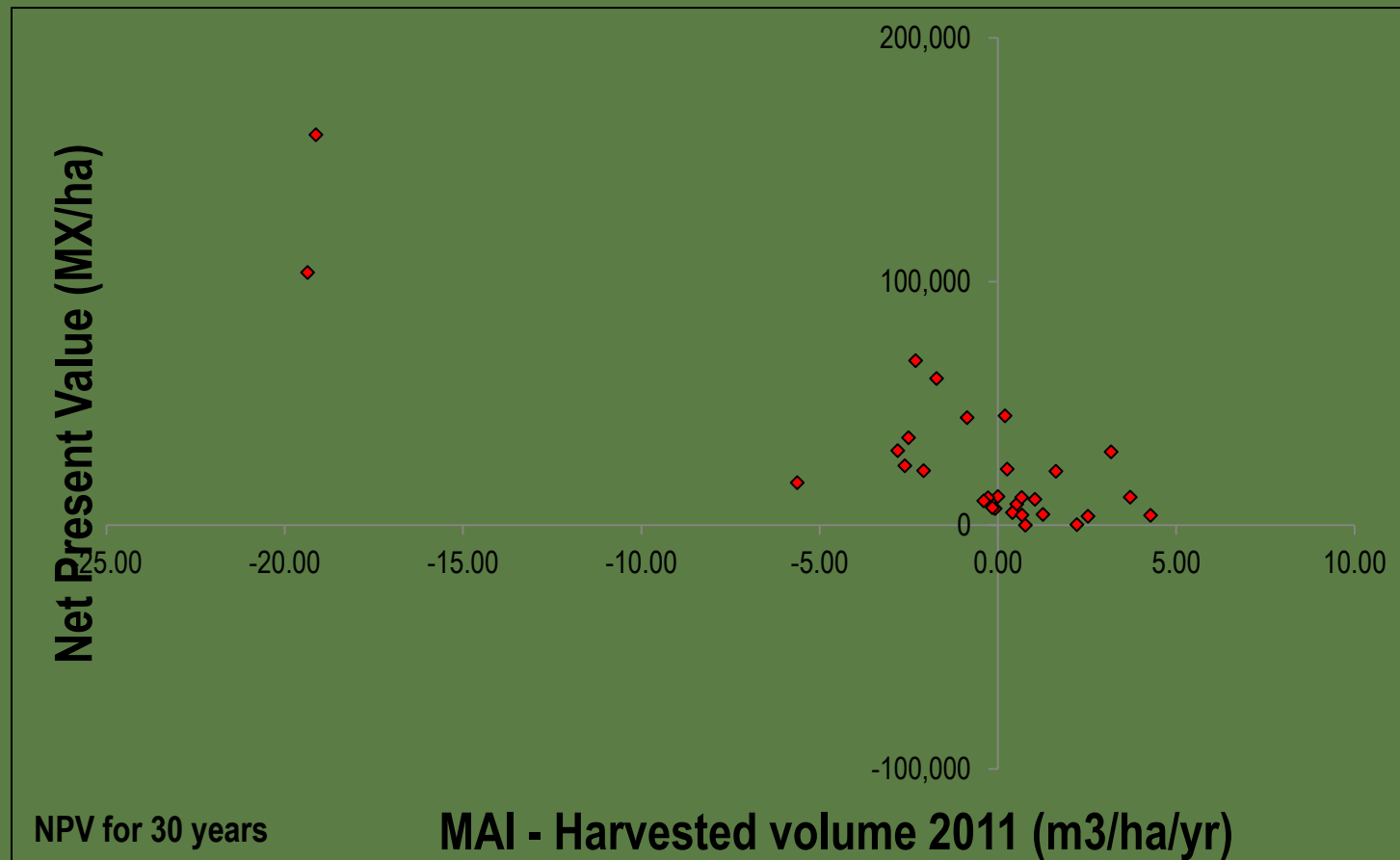
(Cubbage *et al.* 2013b)

Results
Income, Costs, and Profits by Value Chain

(Cubbage *et al.* 2013b)

Mexican Community Forests: A brief history

Balancing Objectives & Targeting Support

Questions

- Are CFEs able to balance pressures to maximize benefits to the enterprise, community, and nation?

- Are government support programs effective in helping maximize benefits?

Methods

1. Combined forest management and harvest data

2. Data envelopment analysis

3. Look for significant correlations

Data Envelopment Analysis

Classify as "Efficient" or "Inefficient"

- Min input; Max output

- Shadow prices

- Constant returns to scale (CCR) assumption

- Conduct DEA from various efficiency "perspectives"
  – Enterprise (profit maximization)
  – Community
  – National government

Efficiency "perspectives"

	Enterprise	← **Profit maximization**
INPUTS	- Land	
	- Wages	
	- Capital & Payment to Community	
	- Timber Stock	
	- Species Comp.	
OUTPUTS	- Revenue	

Efficiency "perspectives"

	Enterprise	Community
INPUTS	- Land	- Land
	- Wages	- Timber Stock
	- Capital & Payment to Community	- Species Comp.
	- Timber Stock	
	- Species Comp.	
OUTPUTS	- Revenue	- Employment
		- Profit Share & Payment to Community
		- Ecosystem Benefits

Efficiency "perspectives"

	Enterprise	Community	Government
INPUTS	- Land	- Land	- Timber Stock
	- Wages	- Timber Stock	- Incentives (Value)
	- Capital & Payment to Community	- Species Comp.	- Incentives (Num)
	- Timber Stock		
	- Species Comp.		
OUTPUTS	- Revenue	- Employment	- Employment
		- Profit Share & Payment to Community	- Land
		- Ecosystem Benefits	- Ecosystem Benefits

Example DEA Results

	PERSPECTIVE		
	Enterprise	**Community**	**Government**
CFE 4	0.82	1.00	0.96
CFE 14	0.75	0.35	1.00

"Efficient" relative to peers:
Max output per unit input

Methods

- Use Spearman Rank Correlation to look for correlation between

  – Efficiency ratings from different perspectives

  – Efficiency ratings and use of government incentive programs

Results
Spearman Rank Correlation

	Enterprise	Community
Enterprise	1	
Community	0.30	1
Government	-0.21	-0.02
Total Value of Incentives	0.28	0.32*
Number of Incentive Programs Enrolled	0.14	0.26

*: significant at .1 α-level
**: significant at .05 α-level

Results
Spearman Rank Correlation

	Enterprise	Community
Governance Incentives	0.17	0.31
Infrastructure and Management Incentives	0.40**	0.16
Payment for Ecosystem Services	-0.18	0.16

*: significant at .1 α-level
**: significant at .05 α-level

Conclusions

- CFEs in Mexico have a unique history
- Measuring community forestry economics, social benefits and policy is ongoing
- Profit maximization and community benefit maximization are not same thing

Conclusions

- No apparent barrier to maximizing both profits and community benefits (and benefits to the nation)

- Overall incentives programs may have positive effect on community benefit maximization
  - Total value of incentives, not number of different programs enrolled is important

- Infrastructure and management incentive programs may help achieve profit maximization (enterprise)