

# CAMPESINOS AND MEXICAN FOREST POLICY DURING THE TWENTIETH CENTURY\*

*Dan Klooster*

*Florida State University*

*Abstract: In contrast to the rest of Latin America, where most forests belong to the state, in Mexico, village communities legally possess most of the country's remaining forests. Despite this, Mexican forest-management policies frequently empowered business interests and the state at the expense of rural communities. These policies marginalized campesinos and squandered opportunities for environmentally sound development. Nevertheless, following a fitful process of land reform, sporadic support for village communities from reformers in the agrarian reform and forestry departments, and the organized demands of villagers, Mexico now has the most advanced community forestry sector in Latin America. Today, hundreds of villages own and operate their own forest management businesses. They generate rural economic benefits while conserving forests, and they represent an important model for sustainable development in Latin America. In the 1990s, neoliberalism brought changes to agrarian and forestry law that initially benefited business interests while abandoning the forest communities best situated to integrate forest conservation and rural development. Campesino groups and their supporters, however, struggled to maintain and extend community forestry in Mexico, with some recent policy victories. Community forestry remains an important part of Mexican forest policy. Mexican forest conservation and the well-being of the campesinos who inhabit those forests depend on strengthening and extending the model, which has implications for forest policy elsewhere in Latin America.*

\*Acknowledgements: Critical comments from Judith Carney, Susanna Hecht, and David Barkin informed a seminal version of this manuscript. I also gratefully acknowledge the support from colleagues involved in the research and practice of Mexican community forestry, especially Francisco Chapela, Gonzalo Chapela, Sergio Madrid, Leticia Merino, Gerardo Segura, David Bray, and Pete Taylor. Thanks also to Rodney Anderson and Gerardo Otero for directing me to several key sources. Critical comments from four anonymous reviewers helped reorganize and sort a few kernels from a lot of chaff. Colleagues and reviewers have shaped my opinions and greatly strengthened the analysis, but they should not be held responsible for errors in either.

*Latin American Research Review*, Vol. 38, No. 2, June 2003  
© 2003 by the University of Texas Press, P.O. Box 7819, Austin, TX 78713-7819

## INTRODUCTION

In Mexico, 80 percent of forests are the *de jure* properties of thousands of *ejidos* and *comunidades agrarias*,<sup>1</sup> with very little state-owned forests (SEMARNAT 2001b; World Bank 1995). In Latin America, in contrast, 80 percent of forests belong to the state. Significant land tenure reforms are underway in Latin America's forests, however, such that Mexican forest policy holds important policy lessons for the region.

With more than thirty years of experience in community forestry, and with hundreds of relatively successful communities engaged in the commercial production of timber,<sup>2</sup> Mexico is a leader in Latin America and the world. Success in community forestry is substantial, but also tenuous and incipient; government commitment to the sector is unsteady and only a minority of forest-owning communities have taken up forestry. Meanwhile, deforestation remains a pressing concern and forest areas remain rife with poverty. A review of the history of Mexican forest policy suggests that environmental and social failures result from policies that alienate *campesinos*<sup>3</sup> from their forests in preference of government and private sector actors. Conversely, persistent counter policies that enhanced the ability of *campesino* forest owners to manage and benefit from their forests have had much greater success in improving rural social and environmental conditions.

Initially, this article describes the context of forest policy in Latin America and the current importance of Mexico's forests. Then it analyzes the history of forest policy in Mexico since the Revolution, including periods of land reform, the establishment of forest bureaucracies, a patchwork of logging bans and forest concessions, and the rise of community forestry as an alternative approach to those policy failures. Finally, it examines the current neoliberal period in which community forestry supporters struggle to consolidate and extend the model. A conclusion clarifies the roots of policies that marginalized or empowered *campesino* forestry and assesses future challenges.

1. *Ejidos* are collective land grants to groups of individuals. *Comunidades agrarias* consist of lands redistributed to peasant communities that had been granted lands by the Spanish Crown. Although agricultural plots are usually individual usufruct, forests tend to be held as common properties in both cases (DeWalt and Rees 1994).

2. Current estimates range from 290 to 479 community forestry enterprises (Alatorre 2000 cited in Bray et al. forthcoming).

3. *Campesinos* are Mexican rural dwellers who make their living through a diverse portfolio of agriculture, forest extraction, craft production, wage labor, remittances, and petty commerce. Their livelihood strategies take them to urban areas and zones of commercial agriculture throughout North America. A typical English translation for the word is *peasant*, but this implies unwarranted assumptions about social relations and the primacy of agriculture in village and household economies (Kearney 1996).

## FORESTS, COMMUNITIES, AND SUSTAINABLE DEVELOPMENT IN LATIN AMERICA

Social and environmental pressures are reworking the landscape of forest management in Latin America. Internal and international lobbying from environmentalists, growing interest in the environmental services forests provide, widespread calls for decentralized and participatory policy-making, reduced budgets for public expenditures, and frustration with the environmental and social results of typical concession policies on national forests stimulate interest in alternative approaches to forest policy. In addition, there has been steady international and regional social activism defending the land rights of indigenous peoples and other traditional inhabitants of forested lands (Castilleja 1993; Keipi 1999). Already, governments in developing countries reserve 8 percent of forests for communities, and they have recognized *de jure* community ownership over 14 percent of forests. More than half of those transfers took place in the last fifteen years, however, especially in Latin America, and experienced observers expect this trend to continue (White and Martin 2002; Kaimowitz 2002).

Forest policy researchers now analyze the proper role of government intervention, frequently criticize centralist, command-and-control approaches, and seek more effective ways to align markets, policies, and land tenure to provide incentives for forest conservation (Brockett and Gottfried 2002). An influential body of Latin American research looks to organized rural communities building small-scale enterprises to diversify their use of renewable natural resources as a necessary vehicle for self-determination and sustainable development (Silva 1998). National policies supporting community-based conservation strategies are highly contested, but are frequently supported by social-justice minded international environmental non-governmental organizations, organized peasant groups and state actor allies (Silva 1994, 1997). As countries like Guatemala, Honduras, Peru, Brazil, and Bolivia progress in forest tenure reform, however, community forestry is already emerging (Bray et al. forthcoming; White and Martin 2002; Utting 1994; Stanley 1991). Mexico's recent history of forest management points to the social and environmental potential of community forestry, and also the barriers that stand in its way.

## THE IMPORTANCE OF MEXICAN FORESTS

Temperate forests (*bosques*) and tropical forests (*selvas*) together cover 33 percent of Mexico's land area (see table 1), an area similar to that of Colombia or India (Palacio-Prieto, et al. 2000). These forests provide vital environmental services. Globally, they harbor significant biodiversity and sequester carbon, which mitigates global warming (Dinerstein et al. 1995; Maser, Ordóñez, and Dirzo 1997). Nationally, forests stabilize hydrologi-

TABLE 1. Forests and Other Land Covers of Mexico

<i>Land Cover</i>	<i>Area (ha.)</i>	<i>Area (% of total)</i>
Cropland	45,687,017	24
Forests ( <i>bosques</i> )	32,850,691	17
Jungles ( <i>selvas</i> )	30,734,896	16
Scrub ( <i>matorral</i> )	55,451,788	29
Grassland	18,847,355	10
Wetlands, mangroves	2,082,584	1
Other vegetation	6,198,623	3
Other land covers	<u>2,345,458</u>	<u>1</u>
Total	194,198,411	100

Source: Palacio-Prieto, Bocco, et al. (2000).

cal cycles, reduce erosion, slow the siltation of reservoirs and waterways, and offer sites for recreation. Regionally, forests protect the watersheds of irrigation districts and urban centers. Locally, forests also play important roles in agriculture and maintain the flow and purity of local water sources.

Forests also provide income from non-timber forest products, logging, and derivative processes. Nationally, they support regional forest-based development strategies, reduce imports, and generate foreign exchange through exports. Locally, meanwhile, forests are crucial for rural livelihoods. Twelve million Mexicans, including many indigenous people, live in forest areas, where rates of poverty and migration are well above national averages. These people rely on forests for firewood, construction materials, and some 1,000 non-timber forest products used for ornamental purposes, medicines, and food (SEMARNAT 2001a; Molnar and White 2001).

Unfortunately, these environmental and economic benefits have not lifted forest residents from poverty nor ensured forest conservation. Annual deforestation estimates from the early 1990s range from 370,000 to 720,000 ha., 0.8 percent to 2 percent annual rate, mostly due to clearing for croplands and pasture. Forest fires affect between 90,000 ha. and 500,000 ha. of forests annually (Masera 1996; World Bank 1995; Cairns, Dirzo, and Zadroga 1995). Much of the blame for that situation rests on the historical failures of forest policy to embrace the special role of *campesino* actors in forest use and conservation. The following sections review that history.

#### DISPOSSESSION, REVOLUTION, AND AGRARIAN REFORM: CAMPEÑINOS AND FORESTS TO 1940

The Spanish Conquest of Mexico initiated a centuries-long process of Indian dispossession and depopulation (Prem 1992; Lovell 1992; Melville

1994). The process was uneven, however. Indians were able to make legal claims to land in some areas, and Spanish interests were not as strong in areas distant from Mexico City. Indian villages in the central highlands maintained possession of much of their lands, and even acquired titles during the sixteenth century. Furthermore, isolated mountains and forests were of marginal interest to the Spanish, and many became refuge areas for indigenous peoples.

Liberal policies during the mid-nineteenth century dispossessed Indians of much of their remaining lands, and this process intensified during the dictatorship of Porfirio Díaz, from 1876 to 1911. During this period, the Mexican government granted land survey companies a third of the supposedly unoccupied lands they surveyed, and in this way vast areas of uncultivated and sparsely populated Indian lands passed into the survey companies' hands (González Pacheco 1981; Guerrero 1988). Meanwhile, existing *latifundios* fenced in adjacent Indian lands, so that by the end of Díaz's dictatorship, Indian communities had been deprived of 90 percent of their land (Otero 1989).

Unequal land distribution galvanized the Mexican Revolution, and agrarian reform became one of the legitimizing pillars of the revolutionary state, enshrined in Article 27 of the Mexican Constitution of 1917. More than six decades of agrarian reform restored indigenous and *campesino* ownership of half the national territory through the recognition of *comunidades agrarias* and the granting of *ejidos*. In the case of *comunidades*, Indian groups or other peasant communities could show they had been dispossessed and the government restored their lands. *Ejidros* are collective land grants to groups of landless *campesinos* of various ethnicities.

Initially, however, revolutionary rhetoric translated into very little land reform, despite continued rural unrest. The first significant land reform came during President Lázaro Cárdenas' term, 1934 to 1940 (see figure 1). In his struggle to consolidate power and establish a more powerful and effective ruling party, Cárdenas cultivated the peasant sector. He rehabilitated the figure of the peasant revolutionary Emiliano Zapata in the legitimating ideology of the ruling party and made the idea of land reform politically acceptable—even required. Cárdenas acted on that ideology by granting *ejidos* to organized peasants and arming peasant militias to defend themselves from landowner reprisals—and also to defend Cárdenas in the event of a coup. He also established the Confederación Nacional Campesina (CNC) to bring peasant interests directly into the ruling party (Fox and Gordillo 1989; Hellman 1983; Esteva and Barkin 1983; Knight 1991).

Cárdenas distributed 18 million ha. of land to 800,000 recipients, and the *ejido* share of the nation's cultivated land rose from 15 percent in 1930 to 47 percent by 1940 (Knight 1991). Most of this land was of exceptionally good quality for agriculture (Otero 1989), and land reform did

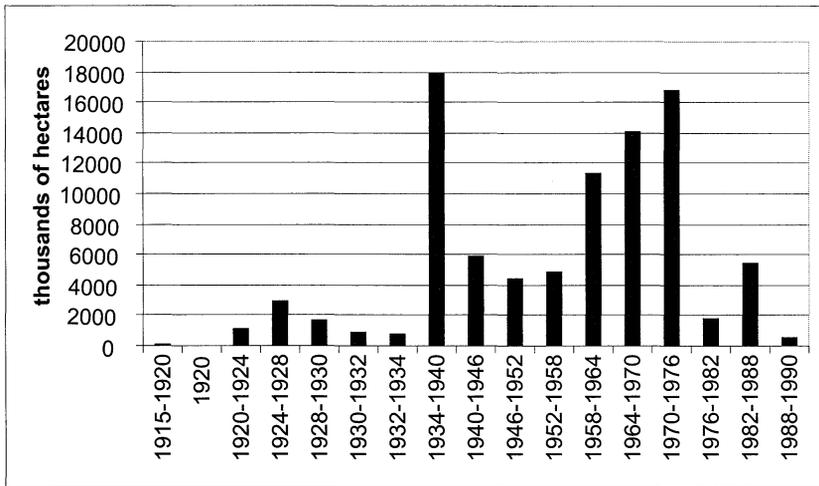


Figure 1. Land Reform by Presidential Term

Source: Data from INEGI and Morett (1992), cited in Challenger (1998, 203).

not touch the land-holdings of foreign and national logging companies (Guerrero 1988; Mendoza Medina 1976). In 1930, only 920,000 ha. of forests were legally in the hands of *ejidos* and *comunidades*. By 1940, they held collective titles to about 6,800,000 ha. of forests, 18 percent of all forest lands, with the majority still in private hands (Hinojosa Ortíz 1958, 81; Calva Téllez et al. 1989, 140).

However, agrarian reform was not a deliberate *forestry* policy and did not come with access to the money, marketing skills, forest management skills, and the models of community organizing needed for *campesino* forest owners to become forest managers and producers of logs and lumber (González Pacheco 1985, 3; Calva Téllez et al. 1989, 12). Even in community-owned forests, logging operations were *rentista* arrangements in which private logging companies use short-term permits, relationships of *compadrazgo*, *caciquismo*, raw corruption, and direct violence to buy timber at cutthroat prices (Guerrero 1988, 9). Despite periodic condemnations and various policies designed to discourage, control, and replace it, *rentismo* has been a permanent fixture of Mexican forestry.

During the early twentieth century, Miguel Angel de Quevedo played a key role in professionalizing forestry, establishing the modern Mexican forest service and entrenching an environmental protectionist attitude towards forests. De Quevedo trained in France as a civil engineer specialized in hydraulic projects, but with keen interest in French forestry practices. In France at the time, the environmental services of forests were clearly recognized. The link between deforestation and

flooding was well accepted, and foresters, engineers, agronomists, and scientists considered forests a vital part of the nation's infrastructure, too important to be left in the hands of backward mountain peasant communities (Pincetl 1993).

De Quevedo crusaded for forest protection, founding forestry schools and societies, contributing to national forestry laws, and spreading concern for forest destruction and a philosophy of forest conservation for the common good, and served three times as head of national forestry departments, both before and after the Mexican Revolution.<sup>4</sup> He argued that in the mountainous Mexican context, forests needed to be protected for their role in preventing soil erosion and maintaining surface water and groundwater. He promoted the idea that environmental services were even more important than sustained wood production, and that the government therefore had a major role to play in forest management in order to protect the common good (Simonian 1995).<sup>5</sup> In his efforts to educate the populace in conservation techniques, de Quevedo established an environmental protectionist attitude toward forest conservation rather than a managerial, sustained use approach. This philosophy did not promote a *campesino* role in forest use or stewardship, but rather an increasingly authoritative and repressive forest bureaucracy.

The 1926 forestry law, much influenced by de Quevedo, established the legal foundation for forestry regulation, regional logging bans, and the creation of national parks.<sup>6</sup> The law set up a state organism for administration and the provision of technical expertise, and initiated a complex system of permits for logging, transporting, and processing forest products. It placed more emphasis on punitive measures than on prevention (Calva Téllez et al. 1989; Halhead 1984; Crocker 1984). The ambitious scope of the law required a powerful, well-funded and efficient forestry bureaucracy to implement it, but this was lacking. Meanwhile, land reform laws and rural development policy channeled public resources towards crop and livestock production, undermining the conservationist aspects of the law (World Bank 1995, 34).

4. From 1904 to 1908, he was in charge of the Junta Central de Bosques. From 1912 to 1920, he headed the Departamento de Conservación de Bosques, and from 1934 to 1940, the Departamento Forestal y de Caza y de Pesca (Borgo 1998, 300).

5. De Quevedo's broader environmental concerns for forests were more advanced than many of his contemporaries in the United States, who emphasized forest management to avoid timber famine (Clary 1986), but the political component was similar to the views of conservationists like Gifford Pinchot who also sought ways to put the control of forests in the hands of state-supported experts, who considered themselves best able to plan for future use and to promote the rational, efficient use of natural resources (Cox 1985; Hays 1980).

6. Under President Lázaro Cárdenas (1934–1940), de Quevedo headed an independent forestry and established thirty-nine parks and thirty-six forest reserves (Challenger 1998, p. 212).

During Cárdenas' presidential term, de Quevedo served as head of the national forest department, but even he failed to successfully implement the law. Forest guards remained few, unable to control *campesino* clearing and woodcutting, and were often susceptible to bribery by *rentista* logging companies. Meanwhile, there were complaints that de Quevedo acted against the revolutionary principles of the agrarian reform, obstructed *campesinos'* ability to use their forests, and disputed the agriculture department in development plans and strategies. De Quevedo's actions to protect forests from *campesinos* interfered with Cárdenas' project of consolidating a peasant base of support for the ruling party and so he dismissed de Quevedo, dissolved the independent forestry department, and moved its functions over to the agriculture department (Simonian 1995).

By the end of this period, the basic dilemma of Mexican forest policy was already well established; on one side, a private logging sector with increasingly tenuous access to forest resources, on the other side an excluded rural population with expanding rates of forest ownership, but few forest management skills and fewer financial resources. Meanwhile, environmental protectionist ideas influenced legislation, elite public opinion, and the incipient forestry profession. This period of forestry saw the establishment of a central forestry bureaucracy with repressive tendencies.

#### ENVIRONMENTAL PROTECTIONISM AND IMPORT SUBSTITUTION 1940 TO 1958

After Cárdenas, the rate of land reform dropped as presidents promoted the private sector through import-substitution industrialization and projects that benefited private agricultural lands, such as large irrigation projects (Hellman 1983; Otero 1999; Teichman 1988). By 1950, the *ejido* and *comunidad* share of forests land increased only slightly, to 23 percent (Rendón 1962).

Educated urbanites and foresters influenced by de Quevedo's ideas became increasingly critical of *rentista* logging firms (Calva Téllez et al. 1989). Nomad *rentista* firms mocked forestry laws and left behind eroding logging roads and piles of sawdust and waste where their sawmills had been.<sup>7</sup> The vernacular terms for these logging companies were *talamontes* (forest destroyers) and *rapamontes* (clear cutters) (Hinojosa Ortíz 1958). In a 1956 conference, foresters estimated that 38 percent of Mexico's forests had been clear-cut and were incapable of producing

7. They were extremely inefficient, leaving 30 percent of the trees in the forest and squandering 50 percent of what was left in antiquated sawmills. Various contemporary reviewers from FAO, the United States, Switzerland, and Finland all decried the degree of waste and the outdated, poorly maintained sawmill equipment (Hinojosa Ortíz 1958).

commercial harvests for 20 to 30 years. They guessed that only 22 percent of forests were still virgin (Villaseñor 1956). Up to that time, virtually all logging permits had been granted to virgin forests (Huguet 1956).

The rural social costs of *rentismo* also entered debates about forestry policy. In addition to despoiled forests, nomad *rentista* firms left behind broken promises for schools and other public investments, and many writers blamed *rentismo* for social conflict and poverty in forest areas (Calva Téllez et al. 1989). Payments for logging rights varied wildly and were based on the bargaining power of isolated communities with limited market knowledge (González Pacheco 1981). *Rentista* loggers corrupted and bribed community leaders, and when this was not sufficient, resorted to violence (Calva Téllez et al. 1989, 13). Under typical rental arrangements the contractor enjoyed a 50 percent profit margin while the community or *ejido* received much less than 5 percent of the commercial value of the wood. As a former secretary of forestry observed, the system led to “destruction, pillage, and injustice” (Hinojosa Ortíz 1958, 60–61).

Forestry policymakers were not yet ready to see a role for *campesinos* in solutions to forestry problems, however. Instead, they portrayed *campesinos* as an endless army of ants, driven by poverty and hunger, slowly but tirelessly finishing off Mexico’s forests (Beltrán 1964, 87; Hinojosa Ortíz 1958, 73). From the 1940s on, Mexican presidents chastised *campesinos* for slashing, burning, woodcutting, and thus causing erosion and siltation of the developing nation’s new dams and ambitious irrigation and hydroelectric projects (Simonian 1995). The Mexican forest service estimated that 50 million ha. of forest cover had been lost due to *campesino* agricultural clearing (Anonymous 1969; see Challenger 1998). Environmental protectionist concerns about deforestation and forest mismanagement led to bans on logging in a third of Mexico’s forests (Hinojosa Ortíz 1958, 44).<sup>8</sup> Many of them remained in effect until the 1970s (Bray and Wexler 1996).

In addition to logging bans, a second major change from forestry policy before the mid-1940s aimed to promote import-substituting industrialization in the forestry sector. Import interruptions during the Second World War had highlighted Mexico’s dependence on forest products, despite having substantial areas of forest, and foresters argued that Mexican forests could easily satisfy internal demand for forest products, generate exports, and provide as much revenue as the petroleum sector (Villaseñor 1956, 20; Calva Téllez et al. 1989; Mendoza Medina 1967). The mechanisms designed to increase production were more

8. Guerrero (1988) discounts the contention that bans had a conservation motivation and argues that they were implemented in order to create reserves for industrial expansion and disadvantage logging interests not allied with personal presidential interests.

concessions to big, integrated, logging and processing firms established with national and foreign capital. Twelve new firms were established between 1945–1972, with concession periods as long as 60 years, but averaging 25 years (Bray and Wexler 1996; Guerrero 1988; Calva Téllez et al. 1989).

#### FOREST LAND REFORM, PRODUCTIONISM, AND CENTRALIZATION, 1958 TO 1975

During the 1960s and 1970s, the unequal growth of the “Mexican Miracle” led to rural social conflict, with widespread land invasions and several rural guerrilla movements (Hellman 1983; Esteva and Barkin 1983; Teichman 1988). To confront such pressures during his term of 1958 to 1964, President Adolfo López Mateos cultivated a nationalistic program that strengthened the ruling party. “Land distribution remained the bellwether of revolutionary idealism. Thus, to merit mention in the same breath with Cárdenas, López Mateos distributed some 40,000,000 acres of land to 128,000 families” (Machlachlan and Beezley 1999, 399). To shore up rural support for the party during the next six years, President Gustavo Díaz Ordaz distributed an even larger area of marginal lands. Faced with an acute crisis of legitimacy after the 1968 student massacre, Luis Echeverría, president from 1970 to 1976, developed an even more strident populist and agrarianist discourse. In his last months in office, Echeverría set a torrid pace for land redistribution, rejuvenating Cárdenas’ legitimating mantle of agrarian reform to gild his reputation and strengthen the ruling party (Machlachlan and Beezley 1999, 440; Teichman 1988; Otero 1999).

Land distributions between 1958 and 1976 greatly surpassed the area Cárdenas had distributed (see figure 1). By 1980, 5,000 *ejidos* and *comunidades* owned about 65 percent of the nation’s forests while 32 percent of forests were distributed among 100,000 private properties (Mendoza Medina 1976; González Pacheco 1981). Currently, between 7,831 and 9,047 *ejidos* and indigenous communities own 70–80 percent of forest lands, 15–20 percent are in small private parcels (*pequeñas propiedades*) of an average size of 15–20 ha. with a legal maximum of 1,000 ha., and 5–10 percent of forest lands are in protected areas and parks (World Bank 1995, xi, 22). These lands provided the foundation for the community forestry sector that would later develop.<sup>9</sup> During the

9. For González Pacheco (1985, 3), this was an unintended consequence: “The governments of the Mexican Revolution endowed *campesinos* with the majority of the forests and jungles of the country. This action was not the product of a conscious policy to convert *campesinos* into silviculturalists, but rather it was simply the inability to realize a thorough agrarian reform that put high quality agricultural lands in the hands of *campesinos* and instead gave them the lands that, since they were farthest from the cities and lacked infrastructure were considered the ‘bush’, lacking commercial value.”

1960s, it also became apparent that logging bans and declarations of forest protection did not achieve the desired effect. They failed to protect forests from rapacious *rentista* logging or from *campesino* cutting and clearing. Bans imposed hardships on farmers and small-scale wood consumers, while enabling exploitative corruption on the part of dishonest forest police. Foresters argued that bans denied forest owners the legal means to benefit from their forests and therefore only served to entrench timber smuggling (Hinojosa Ortíz 1958; Wexler and Bray 1996; SAG 1976; Jardel 1996).

For observers like former forestry secretaries Manuel Hinojosa Ortíz (1958) and Enrique Beltrán (1964), a misguided environmental protectionist urge had converted forests into sterile property representing more of a problem for owners than a source of income that could be used to meet the owners' needs. The best way to protect forests, these foresters argued, was not to foment a "utopian community of tree apostles," but rather to provide economic incentives for forest conservation through scientific forest exploitation. To save the forest, it was best to log it (Hinojosa Ortíz 1958, 120–21; Beltrán 1964).

This productionist vision, however, relied on the state to ensure that forest production generated the social and environmental benefits desired. There were calls for the nationalization of the big forest concessionaires (Rendón 1962; Cárdenas 1967; Xavier Ovando 1981), and the state bailed out many private concessionaires which were no longer profitable as the logging frontier crept farther and farther away from processing centers (Guerrero 1988). The 1960 forestry law also created new forms of state-owned forestry operations and state/private partnerships. By 1977 there were twenty-six parastatal logging firms (Xavier Ovando 1981; Bray and Wexler 1996).

Parallel to the concentration of forest production in large industries, the regulatory structure of forestry became increasingly centralized, repressive, and underfunded.<sup>10</sup> The forestry laws of 1926, 1943, 1948, and 1960 were all quite ambitious, requiring permits and documentation for logging, transporting forest products, or any change in forest land use. The laws required professional foresters' careful oversight of forest management, even stipulating that each tree felled must show the mark of a special branding hammer registered to a particular forester. But the demands of a centralized forest bureaucracy reduced foresters to paper-

10. In 1964, forestry received only 11.5 percent of the budget for the agriculture department, and only accounted for 0.23 percent of the total federal budget (Beltrán 1964). During the 1970s, forestry's share of the agricultural budget dropped to 2.3 percent and annual increases to the forestry budget were below inflation through the early 1980s. Furthermore, half the forest service budget was spent in Mexico City, with 85 percent siphoned off for administration (Halhead 1984).

pushers (Hinojosa Ortíz 1958, 34; see also Moguel Santaella 1994).<sup>11</sup> Bureaucracy and lack of funding led many foresters to sell their signatures and rent out their tree-marking hammers.

Meanwhile, the law was strict on *campesinos*. It provided for stiff penalties for infractions such as petty woodcutting, including confiscation of saws, trucks, and pack animals, arrest for up to thirty-six hours, and hefty fines. The forest service became a kind of police agency, with enforcement falling most heavily on the poorest (Hinojosa Ortíz 1958, 149). Concessions were also repressive. They removed vast forested areas from *campesino* control and even if logging failed to reach their segment of a concessioned area, *campesino* owners could not make use of the forest for anything other than non-commercial household uses (Halhead 1984; Chambille 1983). The only compensation communities received for logging on their lands was sporadic employment opportunities and a payment for logging rights, called stumpage fees. These were extremely low, representing about 1 percent of the market value of the wood in many cases. Furthermore, a substantial share of this money was deposited in a trust fund administered by the Agrarian Reform Department (later Secretariat). Communities had restricted access to this money and often never it saw again (González Pacheco 1985). Concessionaires were widely accused of cheating on measuring the volume of wood from the forest, further reducing the benefits *campesinos* received from the forest (Halhead 1984).

In many cases, government agencies actively participated in the hijack of *campesinos'* forests. Agents of the Agrarian Reform Department took part in all the *ejido's* major decisions. No contract was completely valid without agency approval. The Department also approved withdrawals of stumpage fees from trust funds, and a member of the agency had to be present when the money was actually distributed. The situation under which the parastatal concessionaire Atenquique operated exemplifies the issue: "Ejido dependency on the Agrarian Reform has resulted in the situation that functionaries of the agency walk off with part of the money" (Chambille 1983, 93). The forest service also took its cut in order to look the other way when timber smugglers were at work (Chambille 1983, 133). Similarly, in Oaxaca, company representatives and agrarian officials often arrived at community meetings together and contracts were often signed amidst freely flowing *mezcal*, beer, and empty promises of roads and schools (Abardía and Solano 1995).

Neither did the concessionaire's financial resources, technical ability, and guaranteed forest access result in sound forest managers, as had been hoped. Logging was spatially concentrated within the concessions

11. For a similar analysis of the bureaucratic tendencies of state forest regulation in Costa Rica, see Brockett and Gottfried (2002).

and directed at the best trees in the forest. It left stands with low growth rates and low volumes of commercially desirable species (Snook and Negreros 1986; Chapela and Lara 1995). The concessionaires' wasteful use of forest resources threatened the long-term viability of the big forest industries (González Pacheco 1985).

Under concessions, logging bans, and *rentismo*,<sup>12</sup> *campesinos* were marginalized from both the control over forests and the benefits. The forest became, from their perspective, marginal, and *campesinos* resisted with timber smuggling, clearing, and burning. None of these policies succeeded in circumventing the basic dilemma of community forest ownership without community forest production.

#### THE RISE OF COMMUNITY FORESTRY, 1975 TO 1992

As early as the 1960s, a few foresters argued that *campesinos* should benefit from forestry, and perhaps have their own logging businesses, while professional foresters determined the best use of forestry lands (Hernández S. and Sánchez C. 1968; Anonymous 1969). From the 1970s to mid-1980s, a leftist corps in the ministry of agriculture supported a concept of grassroots forestry development (Silva 1997). One of their first victories, in 1973, was to win the removal of logging bans associated with timber smuggling and *campesino* persecution. Some officials in the agrarian reform agency echoed the foresters' arguments. They too argued that *campesinos* were agents of deforestation only because they were alienated from forest benefits. They argued that *ejidos* and *comunidades* should be provided assistance to form their own businesses (Mendoza Medina 1967).

Similarly, the Confederación Nacional Campesina (CNC), criticized restrictive forestry laws that interfered with the ability of *campesinos* to use forests to meet their own subsistence and cash needs and put them at the mercy of forest guards who abused their power, demanded bribes, and fostered timber smuggling. The CNC also argued for the participation of *campesinos* in their own forestry businesses, perhaps initially with state participation (Luna Verduzco et al. 1976; Luna Verduzco 1976).

#### *Initial Community Forestry Experiments*

The Agrarian Reform Secretariat established an office to promote community participation in forestry, and made funds available for capital

12. Despite the growth of big forest concessionaires, *rentismo* continued from the 1970s to the 1990s, accounting for 40 percent of timber extraction in the mid-1970s. *Rentismo* was also regionally concentrated, accounting for 80 percent of production in Chiapas in the early 1980s, when little had changed in this sector compared to the 1950s (Halhead 1984, 124).

acquisition, training, and organizing unions composed of both *ejidos* and small property owners. The stated goal was to substantially increase the number of *ejidos* with their own forest businesses. By 1976, under Echeverría's resurrection of agrarian populism, 257 *ejidos* and communities had been organized and given their own businesses while another 1,046 *ejidos* and communities and 3,000 small property owners were members of some 25 unions spread throughout the republic (Mendoza Medina 1976; Enríquez Quintana 1976). Many of these initial experiments were top-down development projects controlled by government appointees and local bosses with ties to co-opting branches of the ruling party. A dearth of training, lack of communication, and tutelage by the agrarian reform agency precluded significant *campesino* participation (Mendoza Medina 1967, 96; Guerrero 1988; Halhead 1984). Nevertheless, a handful of relatively successful projects pointed to the potential benefits of community participation in forestry.

Supporters of the community forestry model pointed to the substantially greater benefits that *campesinos* in these examples received, despite problems. They argued that in successful experiences, *campesinos* participated in production and management decisions and forest management was better "since the *campesinos* see the forest as a permanent source for the raw materials for the businesses where they or their sons work, there are public works projects like electricity, schools, health centers, roads, sewerage, and drinking water" (Enríquez Quintana 1976, 72).

The philosophy equating production with conservation began to focus more on the role of *campesinos*, the benefits they received from forests, and their participation in forest production. This idea was expressed as the "transcendental problem" of forestry development in the National Program of Forest Development (Programa Nacional de Desarrollo Forestal) plan of 1976 (SAG 1976, 268).

A social development<sup>13</sup> division in the Forestry Department also began to promote community organization and promote rural forestry development, especially among the poor (SFF 1976; Silva 1997). The team of experts in this office sought to develop community forestry and to help *campesinos* gain the full fruits of the forests they possessed. Although the concession system was breaking down, officials in the *campesino* office faced resistance from regional alliances of timber interests, state governors, and foresters. Where that alliance was strained, however, grassroots organizing among the forestry *ejidos* became possible. Those tensions allowed promoters from the forestry agency of the Agriculture Secretariat to forge counter alliances with *campesino* communities and a few state governors (Silva 1997, 482). Most of these experiments with

13. Departamento de Desarrollo Social de la Dirección General para el Desarrollo Forestal de la Subsecretaría Forestal y de la Fauna.

community-owned logging businesses took place in areas where bans had been recently removed and where established logging and processing interests were not directly challenged (Bray and Wexler 1996).

The state of Puebla Forestry Plan, for example, involved local people in both the work and revenues of forestry. Promoters grouped several *ejidos* and private property owners (*pequeñas propiedades*) into production units. *Ejidors* elected representatives to a group assembly that was responsible for organizing logging. The forestry department placed great emphasis on training and committed itself to a slow process of organizational development. The project resulted in increased revenues at the *ejido* level and a high level of community participation. The experience resulted in better silviculture, greater community motivation for forest conservation, and a better foundation for conservation than alternative systems of exploitation at the time (Halhead 1984).

In the state of Quintana Roo, as a parastatal's thirty-year concession came to an end, a combined effort between foresters from the forestry department, an uncharacteristically supportive state governor concerned with deforestation problems, and protest from forested communities all combined to block renewal of that concession and opened the way for a state forestry plan which incorporated *ejidos* into production. Starting in the early 1980s, foresters and other professionals helped indigenous (Maya) villagers learn how to measure timber volume and calculate its value, and this galvanized local organizing to assert more control over forestry production. Later interventions extended skills in forest management and other aspects of production. This so-called Pilot Plan dramatically increased the revenues *ejidos* retained from forestry. Forest management improved and, for the first time ever, villagers established permanent forest areas where clearing for agriculture would no longer occur (Bray et al. 1993; Lanz, Arguelles, and Montalvo 1995).

### *Campeños Organize and Change the Policy Climate*

In the late 1970s, as concessions began to reach maturity, communities whose forests were affected began to organize to oppose renewal.<sup>14</sup> Regional organizations of communities formed to oppose the renewal of concessions, forged inter-regional links, and lobbied government to allow community forest management (Abardía and Solano 1995).

14. Sometimes foresters sided with community activists in struggles against the concessionaires. As one such forester put it in Durango, during the 1970s, "We realized that there was a contradiction between [the concessionaire's] economic objective and ours. [The company] wanted more volume. We looked for good management, environmental protection" (cited in Taylor 2000, 261).

These organizations issued public statements that encompassed both social and environmental justifications for their positions. One newspaper group stated, "we will no longer permit our natural resources to be wasted, since they are the patrimony of our children" and called for community control of forests with community-directed rational exploitation (cited in Bray 1991, 15). Communities focused their demands on President Miguel de la Madrid, who was pressured to promise support for *campesino* forest production in his 1982 presidential campaign (Halhead 1984). In 1983, fifty-six communities petitioned the president to "take energetic action to end unlimited concessions to lumber companies who without scruples exploit and contaminate the land" (Simonian 1995, 208).

Following pressure from these unions of forest-owning communities and from reformers within both the forestry bureaucracy and the agrarian reform agency, the 1986 forestry law rescinded the concessions, required that logging permits apply to forest owners and not third parties, and recognized the right of communities to form their own logging businesses (Wexler and Bray 1996, 237; Bray and Wexler 1996).

The new situation provided incentives for collective action around profitable logging businesses; after breaking free from a concessionaire, community revenues increased by as much as 600 percent, even after raising the wages of community-member loggers. This transformation of opportunities generated powerful motivations for communities to engage in the construction of grassroots social capital (Klooster 1997, 43–44; 1999).<sup>15</sup> Building on experience gained from working for the concessionaire logging firms and making use of existing logging roads, communities in several areas began to conduct their own logging operations. They sold logs to the same big firms that previously employed them and rented their forests, but under a more competitive market with much higher prices to the timber producers. Some communities were able to quickly capitalize and bought trucks, bulldozers, and sawmills (Bray 1991; Abardía and Solano 1995).

At the time of the 1976 forestry plan, only 2 or 3 percent of timber came from forests that were directly managed by *ejidos* and *comunidades*. By 1980, about 17 percent came from community-managed forests, with concessions and *rentismo* evenly dividing the rest (Halhead 1984; Challenger 1998; González Pacheco 1981). By 1992, an estimated 40 percent of commercial timber production and 15 percent of milled lumber production were from the organized community forestry sector (Bray and Wexler 1996).

15. Community forestry policy of the 1980s, therefore, served as a catalyst for the formation of local social capital. At the same time it illustrates the role of central government in successful decentralization strategies (Fox 1996; Tandler 1997).

*The Social and Economic Significance of Mexican Community Forestry*

The Mexican model of community forestry generates substantial environmental and social benefits, especially when compared to the concessions and ineffective logging bans that preceded them. For example, in Nuevo San Juan Parangaricutiro, Michoacán, forestry supports logging operations, sawmills, and a furniture factory. Logging and value-added activities employ a majority of the community's 1,200 male members, and the community engages in careful management and reforestation to increase the coverage and commercial quality of the community's highland pine-oak forests, which are visibly denser than neighboring communities which have not been able to establish community forestry operations (Avarez-Icaza 1993; Sánchez 1995; Moreno and Salinas 1998 cited in Klooster and Maserá 2000).

In the state of Oaxaca's mountains, 95 communities are engaged in logging, of which 27 are *rentista*, 42 manage their own logging operations, and 26 manage both logging operations and sawmills. Many use the proceeds from these activities to diversify their community businesses (Antinori 2000). Many of these communities also invest in reforestation and regeneration in areas where past logging by a parastatal concessionaire mined pine, leaving commercially degraded, oak-dominated stands (Abardía and Solano 1995; López and Gérez 1993; Rodríguez et al. 1993). Some of the most advanced communities implement an adaptive forest management strategy, with permanent test plots to monitor forest growth and soil erosion. They consider the habitat needs of wild mushrooms in their management plans, and set aside conservation, woodcutting, and watershed management zones (Chapela 1992; Chapela and Lara 1995; Chapela 1999; Bray et al. forthcoming; Bray 1991).

The state of Quintana Roo provides a number of other examples in which community forestry in the tropical lowlands halts the deforestation frontier, increases forest cover, and generates much greater community interest in reforestation and forest regeneration than the previous concession model. Communities there have also established permanent monitoring plots and periodically re-evaluate forest inventories (Santos, Carreon, and Nelson 1998; Lanz, Arguelles, and Montalvo 1995; Merino 1995; Bray et al. 1993).

Forestry communities frequently establish protected areas for endangered tree species and watershed protection, often well in excess of those required by forestry regulations. Many choose to decrease harvests in order to maintain long-term yields and some even adopt hunting regulations (Bray et al. forthcoming). Twenty-one communities managing 516,404 ha. of forests in multiple regions of Mexico have been certified to meet Forest Stewardship Criteria for well-managed forests (FSC 2002). Furthermore, environmental and social improvements are not limited

to the exceptionally well organized communities. Even a community wracked by internal corruption, financial mismanagement, and clandestine logging had greater community financial benefits and greater reforestation efforts after community control than during previous experiences with *rentismo* and concessions (Klooster 1999, 2000).

#### COMMUNITY FORESTRY AMIDST NEOLIBERAL REFORM, 1992 TO 2002

By the early 1990s, the challenges of consolidating community organizations and improving community capacity to manage financial and natural resources were clear. Hundreds of communities were successfully managing their forests but needed support in forest management, business administration, equipment, and road infrastructure. Thousands more lacked internal organization, business management skills, or the equipment needed for logging (World Bank 1995, 24–6). The community forestry sector had proven its potential, but needed substantial continued support. In the face of the neoliberal reforms of the 1990s, it seemed doubtful that the state would take on such a role.

Drastic changes in Mexico's development strategy made the 1986 pro-community forestry law obsolete almost as soon as it was signed. During the 1980s, budget deficits, debt burdens, and a decline in the terms of trade of petroleum, Mexico's principal export, forced a reconsideration of a development model based on import substitution, trade barriers, and subsidies. The country entered the General Agreement on Tariffs and Trade in 1986 and embarked on a path of open markets, international integration, export promotion, and decreased public expenditures. After already substantially reducing trade barriers, Mexico entered into the North American Free Trade Agreement (NAFTA) with the United States and Canada in 1994. Neoliberal ideology demanded a series of changes to agrarian and forest laws that, paradoxically, increased the need for state support to *campesino* forest communities at the same time that the state retreated from previous methods of intervening in the countryside.

A principal aim of the 1992 modifications to Article 27 of the Mexican Constitution and accompanying agrarian legislation was to create rural institutions compatible with free markets (Cornelius and Myhre 1998; DeWalt and Rees 1994). Reform ended the threat of expropriations, which were thought to be inhibiting investment, and allowed—but did not require—*ejido* privatization. These provisions explicitly prohibit the parcelization and privatization of common property forests and rangelands, however (World Bank 1995; Otero 1996; Otero 1999; Taylor 2003; Zabin 1998). Common property *campesino* communities fit very uncomfortably in the neoliberal discourse, but in the Mexican context, *ejidos* and *comunidades agrarias* are irrevocable, at least in the short and medium term. The reformers, therefore, also created new legal mechanisms

for private capital to associate with common property through joint ventures, made it easier to agglomerate land within *ejidos*, and established new mechanisms for associations of individuals within *ejidos* and *comunidades* to exploit common properties (Wexler and Bray 1996; Cornelius and Myhre 1998; World Bank 1995, 69).

One faction of agrarian reformers also sought to enhance *ejido* autonomy and internal democracy (Cornelius and Myhre 1998, 17). Previously, the state-*ejido* relationship was one of tutelage, control, and domination (Otero 1999; de Janvry et al. 1996; de Janvry et al. 2001; Ibarra Mendivil 1989). Reforms increased the relative autonomy of communities; no longer must a representative of the agrarian agency be present for the results of community assemblies to have legal validity, for example. Provisions also exist for the codification and federal recognition of communities' customary resource access rules. These reforms reduce the tutelary and patronage powers of the state, and weaken its political and economic control over the *ejido*, while other reforms reduce the leverage of *ejido* leaders and strengthen the assembly of *ejido* members. In the long term, increased internal autonomy may prove to be the most important impact of the 1992 reforms, but this has yet to be seen. Initial experiences show little *ejido* democratization (Cornelius and Myhre 1998, 17; de Janvry et al. 2001), while analysts of the situation of *ejidos* in urbanizing areas believe that, on the contrary, the reforms actually create new avenues for intervention by local governments and the urban development agency (Jones and Ward 1998).

The 1992 reforms to the forestry law also reflected the neoliberal vision to "change the conception of the state from a centralist focus to one where its actions are limited to creating a favorable framework for forestry development, leaving to producers and interested individuals the management, regeneration, and exploitation of forest resources" so that "economic agents involved in the activity become the principal custodians of forest resources" (Téllez 1994, 271, 268). In this sense, the forestry law of 1992 was a break from the 1970s and 1980s dialogue between proponents of state-led forest industrial development and proponents of state-tutored community forestry (Bray 1998b, 1).

For example, it implemented significant changes in the provision of the expert forestry services required for logging permits and forest management. The Mexican federal government has historically exercised tight control over such services, which include conducting forest inventory studies using aerial photographs, compiling management plans, and even marking individual trees for felling. Following the 1986 law, for example, regional offices had exclusive rights to offer professional forestry services. The 1986 law also authorized the forestry department to concede the right to manage technical aspects of forestry to a handful of outstanding communities and unions of communities considered

capable, and this galvanized internal community organization and the formation of some regionally important coalitions of forestry communities that shared the costs of maintaining full time professional foresters and technical staff. The 1992 forestry law, in contrast, devolved silvicultural management to the marketplace. It relaxed licensing requirements for professional foresters and allowed them to form private professional practices that contracted out their services to forestry communities. Although a few communities still maintain their own expert forestry services or are members of unions that provide them, the majority now acquire forestry services through yearly contracts with private firms (Taylor 2003; Zabin 1998).

Meanwhile, the 1992 reforms to agrarian law permit groups formed by a subset of *ejido* or *comunidad* members to exploit communal forest resources (Taylor 2003). Division can lead to *de facto* parcelization of common property forests and the private—rather than collective—appropriation of forest profits (Taylor 2000, 267; Taylor and Zabin 2000). Some of the initial experiences with this provision were troubling, with *ejidos* fragmenting between rival groups who divided up the volume of logging permits and complicated forest management (Wexler and Bray, 1996, 242). On the other hand, they also offer routes for villagers to address issues of internal inequity in common property forest management (Taylor 2000).

Taken as a whole, reforms to agrarian law and forestry law increase the autonomy and responsibility of community forest owners, and thus the need for accountable and representative community organizations (Klooster 1999; see also Ribot 1996, 1999). Even more than before the reforms, the fate of Mexico's timber production forests now depend on the decisions of local communities, and the decisions of individuals in the context of their rural communities. Neoliberal forestry reforms ostensibly aim to improve competitiveness, but they will be counterproductive economically, socially, and environmentally if they undermine the *campesinos'* capacity to organize effectively to meet their new responsibilities for sustainable forest management (Taylor 2000, 271), or if they are unaccompanied by investments to strengthen *campesino* ability to take on these responsibilities (Klooster 1999).

#### PLANTATION PROMOTION, COMMUNITY FORESTRY NEGLECT

Initially, however, neoliberal reformers took little interest in supporting community forestry. Instead, they pursued a vision of rapidly growing pulpwood plantations generating foreign direct investments and foreign exchange through exports to processing plants in the United States and Asia (Télez 1994; Bray and Wexler 1996; Wexler and Bray 1996). Plantations were practically non-existent in Mexico in the early 1990s, with

only a few thousand hectares planted by a paper mill based in Tuxtepec, Oaxaca. Policy makers compared the absence of plantations in Mexico to the situations in Peru, Brazil, and Chile where plantations covered millions of hectares<sup>16</sup> and where forest products contributed 3 percent, 4 percent, and 8 percent of the Gross Domestic Product (GDP), respectively. In Mexico, the forest sector contributed less than 1 percent of GDP and deep trade deficits continued in paper products (Bray 1998b). Echoing 1960s arguments that concessions and state enterprises could generate as much revenue from the forest sector as from the petroleum sector (Mendoza Medina 1967), official goals of 875,000 ha. of plantations in twenty-five years correspond to the area needed to generate foreign currency revenues equivalent to current petroleum revenues.

Neoliberal reforms sought to promote plantations by eliminating disincentives from the threat of expropriation and by increasing the allowable size of private property forest holdings (Télliez 1994). Partly in response to the demands of International Paper, the Mexico-based Grupo Pulsar, and other transnational corporations (Chapela 1997; Bray 1998b), the Mexican government presented a package of fiscal policies and subsidies designed to attract investment in plantations. Investors competed in auctions for subsidies of up to 65 percent, followed by tax relief (Télliez 1994; Paré and Madrid 1996). This preference for transnational plantation firms paralleled the support for non-*campesino* actors during the long concession period of Mexico's forest history. Like the concession strategy, plantation promotion consisted of "strong government promotion, public subsidy, a private-enterprise strategy, and denigration of the *campesino* possessors of the land to the role of *rentistas* and temporary laborers" (Jardel 1996, 65).

A stated goal of agrarian reforms was to facilitate joint ventures between private firms and *ejidos*, but "since the reform, the involvement of the private sector has been conspicuous by its absence" (Jones and Ward 1998, 256). The situation of *ejidos* in urbanizing areas is illustrative. In joint ventures, *ejidos* put up their land as capital in a company, very aware that they run the risk of losing that land if the joint venture goes bankrupt. Furthermore, the value assigned the land rarely gives the *ejido* a majority share in the newly formed joint venture, and *ejidatarios* are suspicious of such inequalities, especially when they know their private sector partner will have better information about financial operations than they will (Jones and Ward 1998). In addition, *ejido* land is home, and often the site of bloody struggles alive in personal or family memory. Land is not always seen as a fungible resource (Jones and Pisa 1999; Cornelius and Myhre 1998).

16. Regionally, Latin America has between 8 and 11 million ha. of plantation forests (Keipi 1999).

By the late 1990s, the Mexican government acknowledged that inadequate partnership schemes inhibited plantation establishment (de Ita 1996), and this remains an issue despite continued tinkering with forestry and agrarian policy. "On lands with a comparative advantage, it is not subsidies that are needed to promote commercial joint ventures, but a better framework for investments on lands owned by *ejidos* and communities" (Molnar and White 2001, 678). On-the-ground analyses of joint ventures suggest they are not proceeding so much because the private sector lacks guarantees, but rather because *ejiditarios* and *comuneros* accurately perceive their own unpreparedness and the inequalities of current arrangements (Jones and Ward 1998; Jones and Pisa 1999). Not only do investors need guarantees of security, communities need to be able to assess their opportunities, evaluate their business partners, and have confidence in their ability to hold them accountable. Like community forestry, therefore, joint ventures between plantation companies and community land owners will also require significant investments in community organization and managerial capacity.

#### RENEWED SUPPORT FOR COMMUNITY FORESTRY

*Campesinos* and their supporters were not silent during these policy changes and debates. *Campesino* activists, organizations of forest communities, and their supporters among government workers, academics, non-governmental organizations, and multilateral lending and aid organizations worked to defend the *campesino*-based approach to forest policy expressed in the 1986 forest law. They took part in the unprecedented debates about the forestry law of 1992, a debate made possible by a conjuncture of factors, including disagreement within the ruling Partido Revolucionario Institucional (PRI), weaknesses in the initial forestry law proposal, and the presence of opposition parties in Congress. They won few concessions in that debate, however (G. Chapela 1997, 47–8; Wexler and Bray 1996, 237).

During the 1990s, some of the actors who had participated in the social forestry reforms in the 1980s entered government service and refocused attention on the forestry social sector.<sup>17</sup> In 1994, they floated the

17. Gonzalo Chapela is a prime example of an actor who participated in forestry social movements in the 1980s and then joined the Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP) in the 1990s, where he was instrumental in drafting the Programa Para El Desarrollo Forestal (PRODEFOR). At the same time, Alfonso Martínez, Jasmine Aguilar, Victor Suárez, and other members of government who had participated in the forestry reforms of the 1970s and 1980s continued to promote community forestry from subsequent positions with nongovernmental organizations (David Bray, personal communication, 23 December 2002). See Bray (1998b) and Environmental Law Institute (1998) for a discussion of the restructuring of environmental functions

idea of a subsidy to community forest owners modeled on the Programa de Apoyos Directos al Campo (PROCAMPO), which ostensibly supports maize producers during the transition to open maize markets under NAFTA and which was implicated in deforestation in some areas where farmers cleared new fields in order to establish eligibility for the subsidy (Zabin 1998; de Ita 1996). With support from the community forest sector, this proposal evolved into the Programa Para el Desarrollo Forestal (PRODEFOR). Together with the pro-plantation Programa de Apoyos Para el Desarrollo de Plantaciones Forestales Comerciales (PRODEPLAN), PRODEFOR was instituted in the 1997 forestry law. This law followed an uncharacteristically vigorous debate between plantation interests, *campesino* supporters, and environmentalists (Bray 1998b).<sup>18</sup>

Subsequent policy struggles focused on how much support would go to plantations, and how much to community forestry. Initial proposals for PRODEFOR funding equal to one-fifth the cost of PROCAMPO were quickly downgraded (Bray 1998a). In 1997, there was a ten to one funding disparity in favor of plantation promotion, but amidst continued protest from community forestry supporters both inside and outside of government, this disparity dropped to less than two to one by 1998 (de Ita 1996; Garnica and Flores Martínez 1998; Paré and Madrid 1996).

More than half of PRODEFOR's 1998 expenditures underwrote the costs of forest management plans, but the program also funded training workshops for communities not yet involved in timber production. The community forest management sector not only called for more funding, but also for a greater emphasis on enhancing community managerial capacity and technical forestry skills. A model for expanding and improving PRODEFOR comes from the Proyecto de Conservación y Manejo Sustentable de Recursos Forestales en México (PROCyMAF), a pilot program in the states of Oaxaca, Guerrero, and Michoacán partly funded by World Bank loans since 1998. In addition to supporting forest management plans, this project also developed an innovative approach to building communities' managerial capacity for forestry through training in administration and forest management, participatory rural appraisals, and workshops in which successful forestry communities share their knowledge with less experienced forestry communities (SEMARNAP and PROCyMAF 1998; Allieri et al. 2000).

---

under Secretaría de Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP), and the role of Julia Carábias, appointed Environmental Secretary under President Ernesto Zedillo from 1994 to 2000.

18. Although *campesino* supporters eventually supported the law because it improved plantation regulation and promoted the community sector, environmentalists opposed it; a capped "universal environmentalist" protested the final vote, which was overwhelmingly in favor (Bray 1998b).

## FORESTRY UNDER THE FOX ADMINISTRATION

On 2 July 2000, Vicente Fox, the candidate of the National Action Party (Partido de Acción Nacional, PAN), won Mexico's presidential election, breaking 71 years of the PRI's uninterrupted rule. Observers expected him to follow neoliberal development policies, with poverty-alleviating palliatives in rural areas, and other attempts to broaden his base of support (Otero 2000). Recent developments in forestry are in line with those predictions.

In April 2001, President Fox reorganized forestry by creating the Comisión Nacional Forestal, a decentralized public organization. The new agency provides continuity to pre-Fox forest policy by administering the plantation program, PRODEPLAN, and the two community forestry programs, PRODEFOR and PROCyMAF (CONAFOR 2002b). The 2002 budget earmarks more than twice as much federal funding for commercial plantations as it does for programs that support community forestry, however (CONAFOR 2002a). This is a similar funding ratio to that of the late 1990s, and so it reflects roughly the same balance of priorities in forestry as the previous administration. Recent planning documents and policy prescriptions also call for continuation of the dual, plantation *and* community-forestry approach that has evolved since 1998 (Molnar and White 2001; SEMARNAT 2001b). Plans are underway to expand PROCyMAF to Durango, Jalisco, and Quintana Roo.

## CONCLUSION

Latin America's forests provide economic benefits through non-timber forest products, logging, and the transformation of forest products. They also generate environmental services including biodiversity, watershed maintenance, and carbon sequestration. Forest conservation requires social arrangements such that a set of actors have both the power to protect and manage forests and also the long-term motivations to maintain them. Mexican experience with community forestry suggests that when forest policy enables traditional forest inhabitants to take on this role, significant social and environmental gains result.

Community forestry comes from the confluence of a revolutionary ideology of land reform that was crucial to state legitimacy, *campesino* mobilization, and sporadic direct government support in community organizing, equipment acquisition, and training in managerial capacity. The Mexican community forestry sector is now unrivaled in Latin America and the world in terms of the number of communities involved and the degree of success with which many of those communities manage their forests and community businesses (Bray 1998a; Bray et al. forthcoming). To achieve that success, however, community forestry had to

overcome the barriers of nature protectionism, bureaucratic centralism, and a blind preference for private businesses.

Miguel Angel de Quevedo and those who followed him recognized the environmental services forests provide and advocated nature protectionism through logging bans and the creation of a powerful forest bureaucracy, but their restrictive policies were unsuccessful in achieving forest conservation. Productionist critics argued that such policies were counter-productive because they converted forests into a kind of government-controlled wasteland, removing the motivation of forest owners to conserve forests as productive assets. Initially, productionism held that private and state-supported big businesses would conserve forests with long-term concessions, but these expectations were not met either. Both kinds of approaches fueled social conflicts with *campesinos* excluded from forest management.

Currently, nature protectionism continues to have significant reflections in policy, such as a conservation strategy in the Monarch butterfly reserve which denies *campesino* communities the ability to benefit from the forests or participate in their protection, resulting in clandestine logging, deforestation, and the repression of *campesinos* (Chapela and Barkin 1995).<sup>19</sup> More critically, neoliberal forest policy favors transnational plantation companies at the expense of forest-owning villages. At the same time, land tenure reform and deregulation increase the responsibility that *campesino* communities have over their forests.

An influential confluence of *campesino* organizations, public officials, and intellectuals, explicitly argue that only a *campesino*-centered forest policy can save Mexico's forests from a history of abuse and degradation. They draw evidence from Mexico's vigorous community forestry sector to argue that *campesino* communities have been much more successful at integrating the maintenance of environmental services with the economic potential of timber production than concessions or the ineffective restrictions of environmental protectionism. Despite the neoliberal restructuring of regulation and subsidy in the Mexican countryside since the 1990s, supporters have managed to salvage significant state support for community forestry.

19. The case of Rodolfo Montiel and Teodoro Cabrera is also illustrative of these tensions. *Campesinos* from the mountains of Guerrero, Montiel and Cabrera helped form "The Ecologist Campesinos of the Sierras of Petatlán and Coyucan de Catalán" to protest logging activities which they blamed for desiccating rivers and streams. Accused of drug cultivation and being "eco-guerrillas," they were arrested, allegedly tortured, forced to confess, and imprisoned. International environmental and human rights organizations took up their cause, and Montiel was given a Goldman Environmental Prize. President Fox released both men in November 2001 (Ross 2000). As an anonymous reviewer pointed out, Mexican environmentalists usually present their activism in simplistic, environmental protectionist, anti-logging terms, without considering the possibility of productionist, community forestry alternatives.

Community forestry faces more legislative and policy battles in the near future, however, with widespread calls for yet another round of substantial revisions to forest law and forest tenure policies (CONAFOR 2002b; Molnar and White 2001; SEMARNAT 2001b). These policy struggles must win greater state support for a successful, but still-tenuous and incipient community forestry sector. Although 65 percent of Mexico's 8,000 forest communities have forests with commercial potential, only 25 percent have formal management plans. Only some of those communities have the capital, forest management knowledge, and the business management skills they need to achieve the social and environmental benefits community forestry can provide. Mexico needs an even stronger government role in building the capacity of forest-based communities to manage their natural resources and develop diversified enterprises based on them (Molnar and White 2001, 679; Klooster 1999).

Additional reforms should also strengthen the power and ability of communities to interact with the private sector in joint ventures on terms of greater equality and clarity. This will also require investments to improve greater managerial capacity, not only for logging communities, but also for communities in areas where plantations might be appropriate.

Most importantly in the long term, however, forest policy must diversify the benefits communities can get from their forests. So far, communities' main economic benefit comes from logging. Perversely, the state's interest in environmental services translates into regulations, restrictions, and added costs to timber producers. The role of *campesino* communities in forest conservation will be strengthened when they are justly compensated for the environmental services their forests provide to regions, the nation, and the globe. The establishment and structuring of markets for environmental services will be the next great challenge facing forest conservation in Mexico (Molnar and White 2001; Klooster and Masera 2000; SEMARNAT 2001b) and elsewhere in Latin America and the world (Brockett and Gottfried 2002; Keipi 1999; Fearnside 1997). For community forestry to survive, or maybe thrive, *campesinos* and their supporters must continue their activism to protect a hard-won role for rural people in forest use and conservation.

## REFERENCES

ABARDÍA, FRANCISCO, AND CARLOS SOLANO

- 1995 "Forestry Communities in Oaxaca: The Struggle for Free Market Access. Case Studies of Community-Based Forestry Enterprises in the Americas." Paper presented at the Forestry in the Americas, Community-Based Management and Sustainability Symposium, University of Wisconsin-Madison, 3-4 February 1995. Nancy Forster, 99-120. Madison: Land Tenure Center and Institute for Environmental Studies, University of Wisconsin, Madison.

- ALATORRE, G.  
2000 *La construcción de una cultura gerencial democrática en las empresas forestales comunitarias*. Mexico City: Casa Juan Pablos.
- ALLIERJ, CHRISTOPHER, ANDREA CALISE, MANUEL COUFFINGAL, BRIAN SHARBONO, AND SONIA EUN JOO YEO  
2000 *Evaluating Social Capital Formation in the World Bank Community Forestry Project, Mexico*. New York: Columbia University School of International and Public Affairs.
- ANONYMOUS  
1969 "Editorial." *Bosques: Organo oficial del Servicio Forestal Mexicano* 6(3):6–7.
- ANTINORI, CAMILLE MARIE  
2000 "Vertical Integration in Mexican Common Property Forests." Ph.D. diss., University of California, Berkeley.
- AVAREZ-ICAZA, PEDRO  
1993 "Forestry As a Social Enterprise." *Cultural Survival Quarterly* 17(1):45–7.
- BELTRÁN, ENRIQUE  
1964 *La batalla forestal: lo hecho, lo no hecho, lo por hacer*. Mexico City: Editorial Cultura.
- BORGO, GUMERSINDO  
1998 *México forestal visto por trece profesionistas del ramo*. Morelia: Gumersindo Borgo and Morevallado Editores.
- BRAY, DAVID BARTON  
1991 "The Struggle for the Forest." *Grassroots Development* 15(3):13–25.  
1998a "Mexican Community Forestry and Its Global Significance." Florida International University. Manuscript.  
1998b "Natural Forests and Plantations: Emerging Trends in Mexican Forest Policy." Florida International University. Manuscript.
- BRAY, DAVID BARTON, MARCELO CARREON, LETICIA MERINO, AND VICTORIA SANTOS  
1993 "On the Road to Sustainable Forestry." *Cultural Survival Quarterly* 17(1):38–41.
- BRAY, DAVID BARTON, LETICIA MERINO-PÉREZ, PATRICIA NEGREROS-CASTILLO, GERARDO SEGURA-WARNHOLTZ, JUAN MANUEL TORRES-ROJO, AND HENRICUS F. M. VESTER  
Forthcoming "Mexico's Community-Managed Forests: A Global Model for Sustainable Landscapes?" *Conservation Biology*.
- BRAY, DAVID BARTON, AND MATTHEW B. WEXLER  
1996 "Forest Policies in Mexico." In *Changing Structures of Mexico: Political, Social and Economic Prospects*, by Laura Randall, 217–28. Armonk, N.Y.: M.E. Sharpe Press.
- BROCKETT, CHARLES, AND ROBERT R. GOTTFRIED  
2002 "State Policies and the Preservation of Forest Cover: Lessons From Contrasting Public-Policy Regimes in Costa Rica." *Latin American Research Review* 37(1):7–40.
- CAIRNS, MICHAEL A., RODOLFO DIRZO, AND FRANK ZADROGA  
1995 "Forests of Mexico: a Diminishing Resource." *Journal of Forestry* 93(7):21–4.
- CALVA TÉLLEZ, JOSÉ LUIS, FERNANDO PAZ GONZÁLEZ, OMAR WICAB GUTIÉRREZ, AND JAVIER CAMAS REYES  
1989 *Economía política de la explotación forestal en México: bibliografía comentada 1930–1984*. Mexico City: Universidad Autónoma Chapingo, Universidad Nacional Autónoma de México.
- CÁRDENAS, CUAUHTÉMOC  
1967 "Nacionalización de la explotación forestal." *Revista del México Agrario* 1(1):99–102.
- CASTILLEJA, GUILLERMO  
1993 "Changing Trends in Forest Policy in Latin America: Chile, Nicaragua and Mexico." *Unasylva* 44(175):29–35.
- CHALLENGER, ANTONY  
1998 *Utilización y conservación de los ecosistemas terrestres de México: pasado, presente y futuro*. Mexico City: Comisión para el Conocimiento y Uso de la Biodiversidad; Instituto de Biología, Universidad Nacional Autónoma de México; Agrupación Sierra Madre, S.C.
- CHAMBILLE, KAREL  
1983 *Atenquique: los bosques del sur de Jalisco*. Mexico: Universidad Nacional Autónoma de México, Instituto de Investigaciones Económicas.

- CHAPELA, FRANCISCO  
 1992 "Complementaridad o conflicto? El manejo del bosque en Santiago Comaltepec, Oaxaca." In *Ecología y sociedad civil*, edited by D. Paas, D. Prieto, and J. Moguel. Mexico City: Praxis.
- 1999 *Silvicultura comunitaria en la sierra norte de Oaxaca: el caso de la Unión Zapotecochinanteca*. Mexico City: Red de Gestión de Recursos Naturales y Fundación Rockefeller.
- CHAPELA, FRANCISCO, AND YOLANDA LARA  
 1995 *El papel de las comunidades en la conservación de los bosques*. Mexico City: Consejo Civil Mexicano para la Silvicultura Sostenible.
- CHAPELA, GONZALO  
 1997 "El cambio liberal del sector forestal en México." In *Semillas para el campo en el campo: medio ambiente, mercados y organización campesina*, edited by Luisa Paré, David B. Bray, John Burstein, and Sergio Martínez Vázquez, 37–56. Mexico: UNAM-IIS, Sansekan Tinemi, and Saldebas A.C.
- CHAPELA, GONZALO, AND DAVID BARKIN  
 1995 *Monarcas y campesinos*. Mexico City: Centro de Ecología y Desarrollo.
- CLARY, DAVID A.  
 1986 *Timber and the Forest Service*. Lawrence: University Press of Kansas.
- CONAFOR (COMISIÓN NACIONAL FORESTAL)  
 2002a Presupuesto Comisión Nacional Forestal 2002. Web page. Available at <http://www.conafor.gob.mx/infgen/metas.htm#Presupuesto/>.
- 2002b Comisión Nacional Forestal Web page. Available: <http://www.conafor.gob.mx/>.
- CORNELIUS, WAYNE, AND DAVID MYHRE  
 1998 *The Transformation of Rural Mexico: Reforming the Ejido Sector*. San Diego: Center for U.S.-Mexican Studies at the University of California, San Diego.
- COX, THOMAS R.  
 1985 "Romanticism, Progress, and Science in the Late Nineteenth Century." *Journal of Forest History* 29(4):156–68.
- CROCKER, MARVIN D.  
 1984 "Forest Policy in Post-Revolutionary Mexico: 1917–1943." *History of Sustained-Yield Forestry: A Symposium*, 360–69. U.S.A.: Forest History Society.
- DE ITA, ANA  
 1996 "Política forestal: entre el bosque natural y las plantaciones forestales comerciales." *Cuadernos Agrarios* 14:83–98.
- DE JANVRY, ALAIN, CÉLINE DUTILLY, MUÑOZ-PINA, AND ELISABETH SADOULET  
 2001 "Liberal Reforms and Community Response in Mexico." In *Communities and Markets in Economic Development*, edited by M. Aoki and Y Hayami. London: Oxford University Press.
- DE JANVRY, ALAIN, ELISABETH SADOULET, BENJAMIN DAVIS, AND GUSTAVO GORDILLO DE ANDA  
 1996 "Ejido Sector Reforms: From Land Reform to Rural Development." In *Reforming Mexico's Agrarian Reform*, edited by Laura Randall, 71–106. Armonk, N.Y.: M.E. Sharpe.
- DEWALT, BILLIE R., AND MARTHA W. REES  
 1994 *The End of Agrarian Reform in Mexico: Past Lessons, Future Prospects*. San Diego: Center for U.S.-Mexican Studies, University of California, San Diego.
- DINERSTEIN, ERIC, DAVID M. OLSON, DOUGLAS J. GRAHAM, AVIS L. WEBSTER, STEVEN A. PRIMM, MARNIE P. BOOKBINDER, AND GEORGE LEDEC  
 1995 *A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean*. Washington D.C.: The World Bank in association with the World Wildlife Fund.
- ENRÍQUEZ QUINTANA, MANUEL  
 1976 "Las empresas ejidales forestales." *Revista del México Agrario* 9(2):71–96.
- ENVIRONMENTAL LAW INSTITUTE  
 1998 *Legal Aspects of Forest Management in Mexico*. Washington D.C.: Environmental Law Institute.
- ESTEVA, GUSTAVO, AND DAVID BARKIN  
 1983 *The Struggle for Rural Mexico*. South Hadley, Mass.: Bergin & Garvey.

- FEARNSIDE, PHILIP M.  
 1997 "Environmental Services as a Strategy Sustainable Development in Rural Amazonia." *Ecological Economics* 20:53–70.
- FOX, JONATHAN  
 1996 "How Does Civil Society Thicken? The Political Construction of Social Capital in Rural Mexico." *World Development* 24(6):1089–103.
- FOX, JONATHAN, AND GUSTAVO GORDILLO  
 1989 "Between State and Market: The Campesinos' Quest for Autonomy." In *Mexico's Alternative Political Futures*, edited by Wayne Cornelius, Judith Gentleman, and Peter H. Smith. San Diego: Center for U.S.-Mexican Studies, University of California, San Diego.
- FSC (FOREST STEWARDSHIP COUNCIL)  
 2002 Forest Stewardship Council. Web page, [accessed 2002]. Available at <http://www.fscoax.org>.
- GARNICA, IGNACIO G., AND JOSE FLORES MARTÍNEZ  
 1998 "Análisis del Presupuesto 1998 y 1999." *Memoria: foro nacional sobre políticas públicas, programas y presupuesto para el sector forestal en México, Palacio Legislativo, 22 y 23 de 1998*. Comisión de Bosques y Selvas, and Comisión de Ecología y Medio Ambiente, 123–26. Cámara de Diputados, XVII Legislatura.
- GONZÁLEZ PACHECO, CUAUHTÉMOC  
 1981 "La explotación forestal en México." *Revista del México Agrario* 14(4):11–40.  
 1985 "La acumulación de capital en los bosques de México." *Momento Económico* (16):3–4.
- GUERRERO, GONZALO  
 1988 "Estado, madera y capital." *Ecología Política/Cultura* 2(4):5–13.
- HALHEAD, VANESSA  
 1984 "The Forests of Mexico: the Resource and the Politics of Utilization." Master's thesis, Department of Philosophy, The University of Edinburgh.
- HAYS, SAMUEL P.  
 1980 *Conservation and the Gospel of Efficiency*. New York: Atheneum (by arrangement with Harvard University Press).
- HELLMAN, JUDITH ADLER  
 1983 *Mexico in Crisis*. New York: Holmes & Meier.
- HERNÁNDEZ, RAFAEL, AND JAIME SÁNCHEZ  
 1968 "Las tierras de las áreas forestales de México deben utilizarse de acuerdo con su capacidad de uso." *Bosques: órgano oficial del servicio forestal mexicano* 4(4):2–5.
- HINOJOSA ORTÍZ, MANUEL  
 1958 *Los bosques de México: relato de un despilfarro y una injusticia*. Mexico City: Instituto Mexicano de Investigaciones Económicas.
- HUGUET, LOUIS  
 1956 *Comentario*. Instituto Mexicano de Recursos Naturales, A.C.
- IBARRA MENDIVIL, JORGE LUIS  
 1989 *Propiedad agraria y sistema político en México*. México, D.F.: El Colegio de Sonora and Miguel Ángel Porrúa.
- JARDEL, ENRIQUE J.  
 1996 "Árbol que nace torcido . . . plantaciones y política forestal en México." *Cuadernos Agrarios* 14:63–77.
- JONES, GARETH A., AND PETER M. WARD  
 1998 "Deregulating the Ejido: the Impact on Urban Development in Mexico." In *The Transformation of Rural Mexico: Reforming the Ejido Sector*, edited by Wayne Cornelius and David Myhre, 247–76. San Diego: Center for U.S.-Mexican Studies at the University of California, San Diego.
- JONES, GARETH A., AND ROSARIA A. PISA  
 1999 "Public-Private Partnerships in Mexico." In *Making Common Ground: Public-Private Partnerships in Land for Housing*, edited by Geoffrey Payne, 153–66. London: Intermediate Technology Publications.
- KAIMOWITZ, DAVID  
 2002 "Amazon Deforestation Revisited." *Latin American Research Review* 37(2):221–235.

- KEARNEY, MICHAEL  
1996 *Reconceptualizing the Peasantry: Anthropology in Global Perspective*. Boulder: Westview Press.
- KEIPI, KARI  
1999 *Forest Resource Policy in Latin America*. Washington, D.C.: Inter-American Development Bank.
- KLOOSTER, DANIEL  
1997 "Conflict in the Commons: Commercial Forestry and Conservation in Mexican Indigenous Communities." Ph.D. diss., University of California, Los Angeles.  
1999 "Community-Based Conservation in Mexico: Can It Reverse Processes of Degradation?" *Land Degradation and Development* 10(4):363–79.  
2000 "Community Forestry and Tree Theft in Mexico. Resistance, or Complicity in Conservation?" *Development and Change* 31:281–306.
- KLOOSTER, DANIEL J., AND OMAR MASERA  
2000 "Community Forest Management in Mexico: Carbon Mitigation and Biodiversity Conservation Through Rural Development." *Global Environmental Change* 10(4):43–70.
- KNIGHT, ALAN  
1991 "The Rise and Fall of Cardenismo, c. 1930–c. 1946." In *Mexico Since Independence*, edited by Leslie Bethell, 241–320. New York: Cambridge University Press.
- LANZ, MIGUEL, ALFONSO ARGUELLES, AND FRANCISCO MONTALVO  
1995 "The Society of Ejido Forestry Producers of Quintana Roo." *Case Studies of Community-Based Forestry Enterprises in the Americas*. Paper presented at the Forestry in the Americas: Community-Based Management and Sustainability Symposium, University of Wisconsin-Madison, 3–4 February 1995, 121–35. Madison: Land Tenure Center and Institute for Environmental Studies, University of Wisconsin-Madison.
- LOVELL, W. GEORGE  
1992 "'Heavy Shadows and Black Night': Disease and Depopulation in Colonial Spanish America." *Annals of the Association of American Geographers* 82(3):426–43.
- LUNA VERDUZCO, MANUEL  
1976 "Hacia una política revolucionaria de la actividad forestal." *Revista del México Agrario* 9(2):17–23.
- LUNA VERDUZCO, MANUEL, ET AL.  
1976 "Primer encuentro nacional de empresas ejidales: mesa de trabajo, producción forestal." *Revista del México Agrario* 9(4):193–98.
- LÓPEZ, RODOLFO, AND PATRICIA GÉREZ  
1993 "The Permanent Tension." *Cultural Survival Quarterly* 17(1):42–44.
- MACHLACHLAN, COLIN M., AND WILLIAM H. BEEZLEY  
1999 *El Gran Pueblo: A History of Greater Mexico*. 2d ed. Upper Saddle River, N.J.: Prentice Hall.
- MASERA, OMAR RAUL  
1996 "Desforestación y degradación forestal en México." Unpublished manuscript. Patzcuaro, Michoacán: Grupo Interdisciplinario de Tecnología Rural Apropriada (GIRA), AC.
- MASERA, OMAR RAUL, M. J. ORDÓNEZ, AND RODOLFO DIRZO  
1997 "Carbon Emissions From Mexican Forests: Current Situation and Long-Term Scenarios." *Climatic Change* 35:265–95.
- MELVILLE, ELINOR G. K.  
1994 *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico*. Cambridge: Cambridge University Press.
- MENDOZA MEDINA, ROBERTO  
1967 "Reforma agraria en las zonas forestales." *Revista del México Agrario* 1(1):95–98.  
1976 "La política forestal en el sector ejidal y comunal." *Revista del México Agrario* 9(2):35–70.
- MERINO, LETICIA  
1995 "Los ejidos forestales de Quintana Roo, retos y perspectivas." 19th Convention of the Latin American Studies Association, 28–30 September, Washington D.C.

MOGUEL SANTAELLA, EDUARDO

- 1994 "Legislación forestal mexicana: de Tenochtitlán a nuestros días." *Reunión de análisis de la Iniciativa de Ley Forestal 1992: Memoria*, edited by J. Carmen Ayala Sosa, and Carlos Francisco Romahn de la Vega, 1–24. División de Ciencias Forestales Universidad Autónoma Chapingo.

MOLNAR, AUGUSTA, AND ANDY WHITE

- 2001 "Forestry and Land Management." In *Mexico: A Comprehensive Development Agenda for the New Era*, edited by Marcelo M. Giugale, Olivier Lafourcade, and Vinh H. Nguyen, 669–81. Washington D.C.: The World Bank.

MORENO, E., AND V. SALINAS

- 1998 "Sustentabilidad del recurso forestal de la comunidad indígena de Nuevo San Juan Parangaricutiro, Michoacán México." Internal Report. Morelia, Michoacán: Instituto de Ecología, UNAM.

MORETT, J. C.

- 1992 *Alternativas de modernización del ejido*. Mexico City: Instituto de Proposiciones Estratégicos y Diana.

OTERO, GERARDO

- 1989 "Agrarian Reform in Mexico: Capitalism and the State." In *Searching for Agrarian Reform in Latin America*, edited by William C. Thiesenhusen, 276–304. Boston: Unwin Hyman.
- 1996 *Neoliberalism Revisited: Economic Restructuring and Mexico's Political Future*. Boulder: Westview Press.
- 1999 *Farewell to the Peasantry?* Boulder: Westview Press.
- 2000 "Rural Mexico After the 'Perfect Dictatorship'." *LASA Forum* 31(3):4–7.

PALACIO-PRIETO, JOSÉ LUIS, GERARDO BOCCO, ET AL.

- 2000 "La condición actual de los recursos forestales en México: resultados del Inventario Forestal Nacional." *Investigaciones Geográficas, Boletín del Instituto de Geografía (UNAM)* 43:183–203.

PARÉ, LUISA, AND SERGIO MADRID

- 1996 "Las modificaciones a la ley forestal: solamente apoyos y subsidios a plantadores forestales transnacionales?" *Cuadernos Agrarios* 14:11–15.

PINCETL, STEPHANIE

- 1993 "Some Origins of French Environmentalism: An Exploration." *Forest and Conservation History* 37(1):80–89.

PREM, HANSS J.

- 1992 "Spanish Colonization and Indian Property in Central Mexico, 1521–1620." *Annals of the Association of American Geographers* 82(3):444–59.

RENDÓN, CRISTOBAL

- 1962 "El ejido forestal." *México y Sus Bosques* 2(3):20–24.

RIBOT, JESSE

- 1999 "Decentralization, Participation and Accountability in Sahelian Forestry: Legal Instruments of Political-Administrative Control." *Africa* 69(1):23–65.

RIBOT, JESSE C.

- 1996 "Participation Without Representation." *Cultural Survival Quarterly* 20(3):40–44.

RODRÍGUEZ, SILVIA, ALBERTA VARGAS, SERGE DEDINA, AND DAVID STANFIELD

- 1993 "Latin America." *Common Forest Resource Management: Annotated Bibliography of Asia, Africa, and Latin America*. D. A. Messerschmidt, 193–220. Rome: FAO.

ROSS, JOHN.

- "Defending the forest and other crimes." Web page [accessed 2002]. Available at <http://www.sierraclub.org/sierra/200007/mexico.asp>.

SAG (SECRETARÍA DE AGRICULTURA Y GANADERÍA)

- 1976 "Programa Nacional de Desarrollo Forestal." *Revista del México Agrario* 9(2):255–344.

SANTOS, VICTORIA, MARCELO CARREÓN, AND KRISTEN NELSON

- 1998 *La organización de ejidos productores forestales de la zona maya: un proceso de investigación participativa*. Mexico City: Red de Gestión de Recursos Naturales y Fundación Rockefeller.

SEMARNAP AND PROCYMAF (SECRETARÍA DE MEDIO AMBIENTE, RECURSOS NATURALES Y PESCA AND PROYECTO DE CONSERVACIÓN Y MANEJO SUSTENTABLE DE RECURSOS FORESTALES EN MÉXICO)

- 1998 *Proyecto de conservación y manejo sustentable de recursos forestales en México: Informe*

1998. Mexico City: Secretaria de Medio Ambiente, Recursos Naturales y Pesca and Proyecto de Conservación y Manejo Sustentable de Recursos Forestales en México.
- SEMARNAT (SECRETARÍA DE MEDIO AMBIENTE Y RECURSOS NATURALES)
- 2001a *Plan Estratégico Forestal Para México 2025: resumen*. Mexico City: Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT).
- 2001b *Programa Estratégico Forestal Para México Para 2025*.
- SFF (SUBSECRETARÍA FORESTAL Y DE LA FAUNA)
- 1976 "Capacitación y organización para el desarrollo de las comunidades de las áreas forestales." *Bosques y fauna* 13(5):22–24.
- SILVA, EDUARDO
- 1994 "Thinking Politically About Sustainable Development in the Tropical Forests of Latin America." *Development and Change* 25(4):697–721.
- 1997 "The Politics of Sustainable Development: Native Forest Policy in Chile, Venezuela, Costa Rica and Mexico." *Journal of Latin American Studies* 29:457–93.
- 1998 "The Politics of Environment and Development." *Latin American Research Review* 33(3):230–247.
- SIMONIAN, LANE
- 1995 *Defending the Land of the Jaguar: A History of Conservation in Mexico*. Austin: University of Texas Press.
- SNOOK, LAURA C., AND PATRICIA C. NEGREROS
- 1986 "Effects of Mexico's selective cutting system on pine regeneration and growth in a mixed pine-oak (*Pinus-Quercus*) forest." *Current topics in forest research: Emphasis on contributions by women scientists. Proceedings of a national symposium*. General Technical Reports, U.S. Forest Service.
- STANLEY, DENISE L.
- 1991 "Communal Forest Management: The Honduran Resin Tappers." *Development and Change* 22(1991):757–79.
- SÁNCHEZ, MARÍA ANGÉLICA
- 1995 "The Forestry Enterprise of the Indigenous Community of Nuevo San Juan Parangaricutiro, Michoacán, México." *Case Studies of Community-Based Forestry Enterprises in the Americas*. Paper presented at the Forestry in the Americas: Community-Based Management and Sustainability Symposium, University of Wisconsin-Madison, 3–4 February 1995. Nancy Forster, 137–60. Madison: Land Tenure Center and Institute for Environmental Studies, University of Wisconsin Madison.
- TAYLOR, PETE
- 2003 "Reorganization or Division? New Strategies of Community Forestry in Durango, Mexico." *Society & Natural Resources* 16 (in press).
- TAYLOR, PETER LEIGH
- 2000 "Producing More With Less? Community Forestry in Durango, Mexico in an Era of Trade Liberalization." *Rural Sociology* 65(2):253–74.
- TAYLOR, PETER LEIGH, AND CAROL ZABIN
- 2000 "Neoliberal Reform and Sustainable Forest Management in Quintana Roo, Mexico: Rethinking the Institutional Framework of the Forestry Pilot Plan." *Agriculture and Human Values* 17(2):141–56.
- TEICHMAN, JUDITH A.
- 1988 *Policy-making in Mexico: From Boom to Crisis*. Boston: Allen & Unwin.
- TÉLLEZ, LUIS
- 1994 *La modernización del sector agropecuario y forestal*. Mexico City: Fondo de Cultura Económica.
- TENDLER, JUDITH
- 1997 *Good Government in the Tropics*. Baltimore: The John Hopkins University Press.
- UTTING, PETER
- 1994 "Social and Political Dimensions of Environmental Protection in Central America." *Development and Change* 25(1994):231–59.
- VILLASEÑOR, ROBERTO
- 1956 "Los bosques de México." *Mesas redondas sobre problemas forestales de México*. Instituto Mexicano de Recursos Naturales, A.C.

WEXLER, MATTHEW B., AND DAVID BARTON BRAY

- 1996 "Reforming Forests: From Community Forests to Corporate Forestry in Mexico." In *Reforming Mexico's Agrarian Reform*, edited by Laura Randall, 235–45. Armonk, N.Y.: M.E. Sharpe.

WHITE, ANDY, AND ALEJANDRA MARTIN

- 2002 *Who Owns the World's Forests? Forest Tenure and Public Forests in Transition*. Washington D.C.: Forest Trends and Center for International Environmental Law.

WORLD BANK

- 1995 *Mexico Resource Conservation and Forest Sector Review*. Washington, D.C.: Natural Resources and Rural Poverty Operations Division, Latin America and the Caribbean Regional Office.

XAVIER OVANDO, FRANCISCO

- 1981 "La legislación forestal vigente." *Revista del México Agrario* 14(3):41–60.

ZABIN, CAROL

- 1998 "Free Markets and Forests: Community-Based Forestry in an Era of Neoliberal Reform." In *The Transformation of Rural Mexico*, edited by Wayne A. Cornelius, and David Myhre. La Jolla: Center for U.S.-Mexican Studies, University of California, San Diego.