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Forest Policies in Mexico

Mexico holds tenth place in the world in forest cover. Its forests are home to some seventeen million people. Up to 80 percent of Mexican forest lands are held by ejidos or indigenous communities. Deforestation, however, is occurring rapidly as forests give way to agriculture and livestock production.

Private industries were allowed access to forests in 1943, and communities could sell only to them. On the other hand, in 1958, forestry was banned in 32 percent of the forest area. During the fifties and sixties, the government had an increasing role in the wood and paper products industries. By 1977, twenty-seven parastatal organizations controlled 56 percent of forest-sector production. They did not use optimal harvesting methods or fulfill their responsibilities for training peasants in management of timber production.

In the 1970s, the Forestry Subsecretariat began a program to empower forest communities to manage their own forests and forest industries. The 1986 Forestry Law ended private forestry concessions and began to dismantle forestry parastatals, emphasize environmental consequences of timber programs, and increase powers of local communities. Severe financial constraints and government reorganization limited the full implementation of this law.

The reform of Article 27 encouraged ejidos to enter joint ventures with private enterprise. The 1992 Forestry Law encouraged the development of forestry plantations, simplified administrative procedures, and privatized forestry services. The entry of Mexico into NAFTA, however, allows more efficiently produced United States and Canadian forest products to replace Mexican lumber in the north and center of Mexico. David Barton Bray and Matthew B. Wexler believe that Mexican community forestry, consequently, is likely to require special measures of support to survive.

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Introduction

There are many singular things about the forests of Mexico, not the least of which are the many policies applied to them. Mexican forest policy in the twentieth century has included virtually open doors to foreign investments, bans, industrial concessions, timber and pulp parastatals, a vigorous community forestry policy, and most recently, an effort to follow a plantation path of development. Although many of these policies were shaped by broad ideals such as forest conservation and efficient timber production, none of them have effectively delivered economic benefits to forest communities, reduced a persistent trade deficit in forest products, or conserved biodiversity. But perhaps the most singular thing about Mexican forests is the degree to which they are administered by local communities, giving Mexico what may be the largest community forestry sector anywhere in the developing world.

In marked contrast to most emerging economies, where forest lands are in state or private hands, the single most distinguishing fact of Mexican forest resources is that up to 80 percent of Mexican forest lands are held by ejidos or indigenous communities. The wealth of these forest resources represents perhaps the single greatest opportunity for many rural communities to participate in regional development. Mexico has some fifty million hectares of closed forest, 25 percent of the national territory, about half of which are highland pine and oak forests, accounting for most of the industrial production. While Mexico occupies tenth place in the world in forest cover, it is only twenty-sixth in forest production. The output from the wood products industries has consistently fallen short of its potential, contributing to Mexico's substantial trade deficit in this sector. Despite the low productivity, Mexico also has an accelerating rate of deforestation, estimated as high as 800,000 hectares per year and mostly tied to agricultural and livestock expansion, which threatens to eliminate Mexico's tropical forests in the early part of the twenty-first century (Télez Kuenzler 1994, 260–72).

The deforestation rates threaten more than just timber production. Mexico is fourth in the world in biodiversity, much of it contained in its woodlands; its forests are also home to an estimated seventeen million people, many of them indigenous, including some of the nation's poorest and most marginalized peoples. For these people, the forests are not only an economic resource, but also a spiritual wellspring and a source of ethnic identity. Any comprehensive forestry policy grounded in the pursuit of "sustainability" must address not only the economic and environmental components of forest resource management, but also the cultural dimensions of Mexican forests. Mexican forests have many other extra-market or difficult-to-calculate values, as well, such as reduction of global warming and protection of watersheds.¹

Bans and Concessions

Bans and concessions have been intertwined policies since the nineteenth century. In the late nineteenth century, the Mexican government granted timber

concessions to attract foreign capital, opening the impenetrable southern jungles of Tabasco, Chiapas, Veracruz, and the Yucatan peninsula, with precious tropical hardwoods flowing out of coastal ports. After the Mexican Revolution, the government established the nation's first forestry law in 1926, to little regulatory effect. During the presidency of Lázaro Cárdenas in the 1930s, the wave of agrarian reform efforts included handing out four million hectares of woodlands, 21 percent of the land distributed, laying the land tenure basis for the contemporary achievements in community forestry. Some efforts were made at the time to promote forest community cooperatives, although most fell into corruption. Beginning in the 1940s, policies of banning commercial logging and industrial concessions held sway, sometimes, puzzlingly, even in the same region.²

Prompted by a shortage in pulp production during World War II, and signaling a turn toward a development model of import-substitution industrialization, a 1943 law created Forest Exploitation Industrial Units (UIEFs). The UIEFs allowed private industries access to large blocks of forests, limiting the communities' right to sell to anyone other than the UIEF, compensating communities with an extremely modest stumpage fee. Many of the UIEFs were enormous, vertically integrated enterprises, such as *Industria Forestal del Poniente*, which held rights to 178,000 hectares of forest lands in Guerrero and also owned a paper and cellulose processing plant. Twelve UIEFs would eventually be established between 1945 and 1972; some of them were given concessions for up to forty years, though twenty-five was more common.³

Concurrent with the industrial development policies, and born out of a concern for the damage to forests and watershed from deforestation (apparent even by the 1940s), the government pursued a vigorous policy of decreeing bans. By 1958, eleven states were under total bans, including such important forestry states as Michoacán and Veracruz, with partial bans in ten other states, covering an estimated 32 percent of the entire forest area. Most of these bans persisted into the 1970s. Their impact fell most heavily on the forest inhabitants, who desperately needed income. Patricia Gerez describes the situation in the Cofre de Perote area of Veracruz: "To avoid the forest guards they had to go down at night, whether it was foggy or rainy, by steep, muddy roads, to be able to return with food and money for family expenses. If the forest guards caught them, they had to give them a tip, or be left with nothing and go back to their communities empty-handed." It was also evident to most observers that deforestation continued apace under the bans.⁴

During the 1950s and 1960s, the government gradually assumed an increasingly larger role in the wood and paper products industry. In some instances, the government invested with private enterprise, as happened in 1956 in Oaxaca with *Fábricas de Papel Tuxtepec (FAPATUX)*, a paper and pulp mill with initial timber rights of 251,825 hectares in the Sierra Juárez. By 1965 ownership of FAPATUX was completely transferred to the federal government. This move-

ment culminated in the early 1970s when, under President Luis Echeverría's tremendous expansion of the federal government, new enormous timber parastatals, known as Decentralized Public Organisms, were formed in Guerrero, Chihuahua, Durango, the state of Mexico, Nayarit, Chiapas, and Quintana Roo, and provided a new state control over the forest sector. The parastatal enterprises in Guerrero and Chihuahua also clearly had rural pacification missions, in an effort to stem unrest that included a guerrilla uprising in Atoyac municipio of Guerrero, long known for pitiless timber exploitation by private interests. By 1977 there were twenty-seven parastatal organizations connected to forest activity that accounted for 56 percent of the total forest-sector production.⁵

The timber operations of the UIEFs and the parastatals generally based their forestry programs on the ultraconservative Mexican Method. The low harvesting volumes approved by this method leave a heavy shade cover and prevent sun-loving species, such as pine, from repopulating harvested areas. This approach resulted in sluggish and uneven regrowth in many regions, often accompanied by an unproductive shift in forest composition. In timber regions where loggers routinely exceeded the recommended extraction levels and based their volumes on the capacity of roads and machinery, selective cutting tended to remove healthy, marketable trees, leaving an ecologically damaged forest. Diseased and pest-ridden stands neighbored over-cut areas where severe soil erosion threatened water table levels and downstream agriculture. On the social side, the government charged the parastatals with educating and training peasants from ejidos and indigenous communities in the management of timber production, a responsibility that received little attention.

It was also during the 1970s and early 1980s that Mexico pursued its most aggressive tropical colonization policies, resulting in the devastation of hundreds of thousands of hectares of tropical forests. The tellingly named National Land Clearing Program (Programa Nacional de Desmontes) was a trust fund set up to transform forest lands "of little economic use" into agricultural or pasture lands. The program was responsible for destroying nearly twenty-eight million cubic meters of timber in five years during the 1970s, almost as much as the national timber production during the same period. However, some elements of the Forestry Subsecretary were able to enter the Uxpanapa colonization region in southern Veracruz (one of the major tropical colonization projects of the 1970s), where they were at least able to mount programs to market the fallen timber.⁶

The Rise of Community Forestry

As government programs mounted enormous industrial plants and slashed tropical forests, another division of the government was plotting a different strategy. In the mid-1970s an effort began, centered in a new division of the Forestry Subsecretariat, the General Directorate of Forestry Development, to empower

forest communities to manage their own forests and forest industries. These efforts passed through various cycles and had many retreats and advances. Combined with intensive grassroots mobilizations against concessions, they would redraw the map of forest exploitation in Mexico and eventually create what is probably the most extensive sector of community-managed forests anywhere in the world.⁷ As romantically expressed by a director of a community forestry promotion effort in northern Veracruz, foresters began to speak of “a country of silviculturalists, of forming social forestry enterprises, and of democratizing, in sum, the process of forest production.” One of the first steps of the young reformers was to call for the lifting of the bans that still existed in many states, in order to create spaces for community forestry.⁸

This government effort was complex and inconsistent and emerged from the shifting alliances between cautious bureaucrats, production-oriented reformers, and more radical elements from the social left, with all tendencies springing from the Autonomous University of Chapingo.⁹ It began with the idea of working only with small private property owners (*pequeña propiedad*), fighting the forest service’s reputation for corruption, and only slowly began to work with ejidos and indigenous communities, where it would eventually find its greatest success. It would also begin in politically safe areas in Tlaxcala, Puebla, and Veracruz, where no large industrial concessions existed, and where bans had not allowed the growth of a legal forest industry. It would later expand, however, almost with guerrilla tactics, into the heart of some of the industrial concessions, particularly in Oaxaca. In silvicultural terms, it preached the abandonment of the so-called Mexican Method for Ordering Forests, a silvicultural technique that focused on the healthiest specimens, for the Silvicultural Development Method, which reduced “high-grading” (which leaves a genetically impoverished forest) and led to healthier, more even-aged stands of trees.¹⁰ Philosophically, the young reformers promoted a concept called socioproduction, which attempted to introduce economic justice into production forestry, and encapsulated their efforts in the oft-repeated phrase that forest exploitation should be “controlled by the owners and possessors of the forest” (i.e., indigenous communities and ejidos, respectively). They also advanced the argument that increasing community productive control of forests would overcome Mexico’s persistent trade deficit in wood products, and production gains were evident in the late 1970s, although they later stagnated.

In the early 1980s, frustrated with private concessions and state control of forest production, many forestry communities began to organize, often using aggressive pressure tactics that made some government reformers uneasy. In Oaxaca in particular, forest communities were galvanized into action when the federal government moved to grant a new twenty-five-year concession to FAPATUX, the parastatal pulp mill. The reaction from communities was intense and well coordinated. They blocked logging trucks from entering or leaving their forest lands, sought legal redress, and brought national attention to their demands

to manage their own forests and receive the full value of their timber production. In Oaxaca and other states, political activists, who later became organized into nongovernment organizations (NGOs) that specialized in community forestry issues, also played an important role in providing organizational support, legal advice, and technical assistance to the forest communities.¹¹

Grassroots mobilizations and support from reformers such as Cuauhtémoc Cárdenas (forestry subsecretary, 1978-80) and the leader of the reformers, Leon Jorge Castaños (forestry subsecretary, mid-1980s) helped community forestry reach a high point with the passing of the 1986 Forestry Law. This law reflected a significant policy change that (1) ended all private concessions and initiated the process of dismantling the parastatals; (2) required more detailed and environmentally sensitive studies for timber programs; and (3) began the transfer of technical services (which had been given in exclusive concessions to government administrative units) to local communities. The law marked the first time the welfare of forestry communities was the focus of legislative action. The passing of the law, however, would be the high-water mark for forestry reforms. Despite the momentum from local groups and government reformers, as the 1980s progressed, the forestry subsecretary experienced severe cutbacks in funding and staff as their actions began to directly affect economic interests. In addition, austerity measures resulted in a restructuring of *Secretaría y Recursos Hidráulicos* (SARH) in 1985 that eliminated the Forestry Subsecretariat and transformed it into the National Forestry Commission (CNF).¹²

Bureaucratic disorder has been a significant reason Mexico has not been able to achieve a well-articulated forest policy. As Mexican forest analyst Gonzalo Chapela noted during the Salinas period, three cabinet-level departments, four subsecretariats, and thirteen other government offices all have responsibility for different aspects of forest policy, with these agencies themselves frequently undergoing reshuffling. In 1986, President Carlos Salinas de Gortari reestablished the Forestry Subsecretariat within SARH, where it remained throughout his sexenio, although frequent changes at the top, culminating in the appointment of a medical doctor as forestry subsecretary, suggested little interest in forest policy as such. In the cabinet structure announced by recently elected President Ernesto Zedillo in December 1994, the forestry subsecretary has been taken out of Agriculture and incorporated into the new Secretariat of Environment, Natural Resources, and Fisheries. Although dropped from the subsecretary rank in the new agency, it will be part of a bureaucracy where, for the first time, all natural resources activities are gathered under one administrative roof.

The New Economic Environment

Beginning in 1991, the administration of Salinas de Gortari accelerated Mexico's program of deregulation and decentralization in the rural sector with three sweeping reforms that impacted the forest sector. They were the modification of

constitutional Article 27, the 1992 Forestry Law, and the North American Free Trade Agreement (NAFTA), as well as a wave of privatization that affected all of the forestry parastatals. Taken together, they provide a policy and legal framework that encourages rapid market liberalization and privatization.

According to Article 27, forested lands are not subject to being subdivided and sold; they will remain communal property. However, the agrarian reform does encourage ejidos to enter joint ventures (*Asociaciones en Participación*) between private investors and ejidos that the government hopes will stimulate the capitalization of timber production. To date, several forestry ejido unions have taken advantage of this opportunity to capitalize their timber operations. To attract these investments, however, forest communities have had to yield some control as they enter into partnerships. In the Costa Grande of Guerrero, several ejidos have recently joined with a private logging company from Washington State to form a joint venture that will export saw logs to the United States and Pacific Rim countries. The U.S.-based partner will provide millions of dollars in start-up costs and investments to upgrade machinery and road conditions, in exchange for financial control of the operations. Financial projections suggest that ejidos could more than double their income, although with more intensive cutting than has been done before.¹³ The avowed intention of the law to prevent forest lands from being split up has also been called into question. One large forest ejido in Chihuahua has already been divided into a multitude of small production cooperatives, with the potential for a severe impact on the forest resource due to lack of centralized control.

The 1992 Forestry Law had four notable components: (1) a focus on developing plantations in Mexico (drawing heavily on the Chilean model and assisted by Chilean forestry specialists); (2) a dramatic simplification of the paperwork involved in cutting, transporting, and processing wood products; (3) the complete privatization of technical services; and (4) the use of some of the same language that had supported community forestry in the past, but with no provisions that recognize its special needs and accomplishments in the past decade.¹⁴

Until recently, Mexico had precisely one industrial plantation in the entire country, placing it far behind Latin American leaders like Chile, Argentina, and Brazil. The new legislation hopes to start remedying that situation. Plantations could recover degraded areas using adaptable, fast-growing species such as pine and eucalyptus to provide cheap timber and paper pulp. Plantations also provide environmental benefits through carbon sequestration and watershed protection, although if planted where natural forests once stood, they also occasion dramatic declines in biodiversity. Moreover, plantations provide fewer sources of income than does natural forest management, a significant consideration when so many of Mexico's poorest and indigenous peoples depend on forest resources for their livelihood. The difficulties of promoting plantations in Mexico, despite all the favorable legislation, was exemplified by the failed negotiations

between a large U.S. timber company and the Náhuatl community of Pajapan in southern Veracruz. Local communities can still control their forest lands, and, in this case, analyses that demonstrated that they could earn more from corn, a notorious money-loser, than they could from a forest plantation on their land convinced the community that the timber company was not offering them a fair deal.¹⁵

A clear benefit of the new forestry law is the replacement of the elaborate harvest monitoring system that relied on lengthy paper trails (twenty separate documents by one count) with specially coded hammers that leave indented symbols on the logs, identifying the source of the trees and the responsible parties. This reduces labor costs for logging operations and would theoretically allow SARH officials to spend less time on paperwork and more energy on field inspections (although budget restrictions generally keep forestry officials at their desks). Unfortunately, this method also makes clandestine cutting much simpler, using a borrowed or forged hammer.

But the most important feature of the 1992 Forestry Law consisted of the complete privatization of the quasi-governmental regional agencies of professional forestry engineers (*servicios técnicos*). Among other duties, these engineers are responsible for the design and implementation of the timber harvesting and reforestation programs required by the government for all commercial logging operations. Privatization broke the monopolies held by agencies with government concessions and will lower costs for management plans, but there are also dangers involved. Forestry communities typically contract engineers for yearly tree-marking services and arrange separate agreements for the more costly design of timber programs. Because engineers will compete for low bids to gain contracts, the quality of services is likely to diminish, resulting in overharvesting and insufficient reforestation. Because most forestry engineers are paid per cubic meter harvested, the temptation to overcut is financially to their advantage, making sustainable harvests more uncertain. The new and distant stance of the SARH with respect to monitoring and sanctions makes this scenario all the more likely. In addition to providing this technical assistance, engineers serve as the organizational intermediaries between the forest communities and the government. As the government retreats from direct involvement in forestry production, the engineers will take on an increased importance in natural resource management as the bridge between the communities and government bureaucracies, frequently displacing ejido leadership.

NAFTA: Trade and Financing in the Forestry Sector

The Mexican timber industry is at an enormous disadvantage compared to the United States and Canada, two world leaders in forest production. During the 1980s, Mexican production was about 2 percent of that of the United States, with much higher production costs and with a persistent trade deficit in wood prod-

ucts. In Mexico, five big timber companies represent 17 percent of sales, while approximately 1,400 community forestry enterprises represent 66 percent of national timber extraction. In the United States less than 20 percent of timber companies generate over 80 percent of production.¹⁶ In addition to being small, both the community and private timber industries suffer from antiquated equipment, low capitalization, and high production costs. Thus, for all the extra-market values it represents, and its genuine economic achievements, the community forestry sector is also a high-cost, inefficient producer of low-quality products, having emerged in a highly protected market. The competitive position of Mexican timber production is worst in the north, improving somewhat in the southern states due to higher transportation costs. Since Mexico signed the General Agreement on Tariffs and Trade (GATT) in 1986, cheap U.S. lumber has filled commercial centers such as Chihuahua, Monterrey, and Saltillo, and U.S. suppliers have also made deep inroads into Mexico City, the nation's largest consumer of wood and paper products. NAFTA will strengthen the position of U.S. producers in these areas, although the recent devaluation of the Mexican peso in January of 1995 raises the prices of imports and will buy a bit a breathing space for the Mexican industry.

Conclusions

The introduction of liberalized markets into Mexican forest production will undoubtedly bring some benefits in terms of increased investments and will force greater efficiencies in the industrial plant. But whether it will lead to improved forest management or economic opportunity for the millions of inhabitants of Mexican forests remains a question.

In the case of community forestry, as Laura Snook has argued, "free market competition seems likely to undermine the financial viability of both community forest industries and forest management. In order to prevent the degradation and conversion of Mexico's forests (not to mention the increased poverty) likely to result, it would seem to be in the interest of the Mexican nation and the international community to provide support to these communities in such a way that they can continue to maintain their forests for the benefit of all" (Snook 1995, 34).¹⁷

Some community forest industries may be able to survive by moving into "niche" markets for sustainably harvested timber, if they can improve their silvicultural methods. Recently, a coalition of NGOs called the Mexican Civil Council for Sustainable Silviculture has emerged to promote this opportunity. Mexico has rich human and natural resource capital in the forestry sector, and a more nuanced application of policy instruments, as well as support from the international community, could still maintain the enormous biodiversity of the highland pine and oak forests, and secure the remaining tropical forests for future generations of Mexicans.

Notes

1. For an excellent comparative review of native forest policy in Brazil, Mexico, and Peru, see Silva (1994).
2. See Salas Reyes (1989) and Vazquez Soto (1971).
3. See Baca Castillo (1984).
4. On the bans policy, see Hinojosa Ortiz (1958), 44. For Gerez quote (my translation), see Gerez Fernández (1993).
5. On state involvement in the forestry sector in the 1970s, see Francisco Xavier Ovando H. (1979).
6. See Castillo Fragoso (1978).
7. Former Forestry Subsecretary Leon Jorge Castaños (1992) offers figures showing that 40 percent of commercial timber production and 15 percent of sawnwood in Mexico is produced by the organized community forestry sector. For profiles of some of the most successful community forestry enterprises, see Bray, Carreón, Merino, and Santos (1993).
8. For overviews of community forestry, see Alatorre (1992). For silviculturalists quote, see Alfonso González Martínez (1992, 8); see also SARH (1973).
9. The forestry reform movement may have been one of the most long-lasting in recent Mexican history. Jonathan Fox (1992) provides a penetrating study of how reformers briefly moved to the top in food policy in the early 1980s and provides an analytic framework for approaching forest policy as well.
10. See Laura Snook and Patricia Negreros (1986).
11. For accounts of the community forestry movement in Oaxaca, see Abarúa Moros (1992, 125); Bray (1991, 13–25); Chapela (1992); and Szekely and Madrid (1990).
12. The Comisión Nacional Forestal was created on February 6, 1986, and was composed of several cabinet secretaries whose agencies were involved in forest issues and the directors of the timber parastatals. See Alcocer Medina (1989).
13. See Wexler (1994).
14. See Téllez (1993, 80). It is worthy of note that Claudio X. Gonzalez, who helped the government design the new law, is the son of the chairman of Kimberley-Clark, Mexico's largest pulp and paper manufacturer. See "Officials Pin Hopes on New Forestry Law," *El Financiero Internacional*, January 25, 1993.
15. For the official view of plantations, see Téllez Kuenzler (1994, 75–78); for the point of view of a national network of community forest organizations, see Red Nacional de Organizaciones Campesinas Forestales (1992); on the case of Pajapan, see Paré (1992).
16. Merino (1992). Very little is known about Mexico's industrial timber sector, an important area for future research.
17. A Spanish translation of Snook's work will be published in Mexico in a volume on sustainable grassroots development edited by Luisa Paré, David Barton Bray, and John Burstein.

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