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New promises, new possibilities? Comparing community forestry in Canada and Mexico

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Abstract

The popularity of community-based natural resource management has grown both within British Columbia's forests and around the world. It is often assumed that increased local control of resources will enable more ecologically sensitive forestry practices, but this is not necessarily the case. Through case study examples of "earlier" community forest models in British Columbia and Mexico, the implications of local control for better ecosystem management are investigated. This paper suggests that while community forestry in British Columbia has achieved laudable economic goals, it is still a diverse and emerging type of tenure. Increased institutional support for the Community Forest Agreement Program, meaningful levels of community control, lessons learned through future experience, and comparisons to other community forest programs may lead to a better understanding of the conditions for improved ecosystem management in British Columbia.

KEYWORDS: *British Columbia, community-based ecosystem management, community forestry, Mexico.*

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Introduction

Community forestry is a broad term. It encompasses a great variety of landscapes, histories, populations, and ambitions in the numerous locations and communities in which it has been implemented. At its core, community forestry is grounded in community-level organization, which is seen as a way to address forest destruction and to provide socio-economic aspects of forest management—such as the needs and the rights of indigenous and rural peoples, and the localized impacts of market fluctuations and worker layoffs. As natural resource management strategies are increasingly debated through public consultation, community forestry has gained credence, but is also subject to conflict (Lachapelle *et al.* 2003). As Gray *et al.* (2001b) remark, community-based management of forest ecosystems is no longer a fringe trend, but has matured into an institutionalized concept. Practical and theoretical considerations that surround community forestry are now immense. Over the past two decades, this has spawned significant literature that assesses community forest experiences worldwide (Pagdee *et al.* 2005; Thompson *et al.* 2005; Wily 2005; Poffenberger 2006), reviews definitions, and even relates community forestry to broader paradigms such as neoliberalism (McCarthy 2006). Not much of this work has focussed on British Columbia, although recent articles (Ambus *et al.* 2007; Cathro *et al.* 2007; Tyler *et al.* 2007; Bullock and Hanna 2008) have examined the local context of community forestry and small-scale tenures.

This paper examines some of the commonly held principles surrounding increased community participation in natural resources management, and specifically investigates the implications of local control for better ecosystem management. To what extent is community forestry able to acknowledge or even prioritize ecosystem goals and innovation in forest management? How compatible are these goals with the tenure system in which a given community forestry operates, or with community-identified objectives? How does the cohesiveness or historical experience of a community shape its forest perceptions and goals?

To help explore these questions, two case studies from very different geographical and policy environments are examined: the Cowichan Lake Community Forest Co-operative on Vancouver Island (CLCFC), British Columbia;[1] and the Ixtlan Communal Forestry, Agrolivestock and Services Organization (Unidad Comunal Forestal, Agropequaria y de Servicios Ixtlan, or UCFAS), in Oaxaca, Mexico (Figure 1). Reviews of the community forestry program in British Columbia have been made by consultants (Meyers Norris Penny and Enfor Consultants 2006) and academics (Bullock and Hanna 2008). Yet as Tyler *et al.* (2007) suggest, there is also value in examining experiences from other countries. Despite the vast literature on Canadian forestry issues, little comparative work, either between the provinces or with other countries, exists.

To what extent is community forestry able to acknowledge or even prioritize ecosystem goals and innovation in forest management?

Although a larger number of community forests now exist in both British Columbia and Mexico, these earlier examples of the arrangement are still worth discussing and comparing. These case studies were chosen for two reasons:

1. Both of these community forests were created prior to the flourishing of contemporary community forestry in government policies of the past decade. For example, the CLCFC began operations in British Columbia in 1982, and was incorporated in 1995, prior to the creation of a Community Forest Pilot Program by the Ministry of Forests in 1998.
2. They are well-documented in both primary and secondary literature.

In response to public demand and the popularity of a community forest pilot program, the British Columbia Ministry of Forests and Range has expanded the opportunities for small-scale tenures such as community forests and woodlots. In Mexico, rural communities had rights to manage local logging and businesses in the 1970s, but in 2003, a new Forest Law gave community

1 This is not to be confused with the North Cowichan Municipal Forest Reserve. The municipal forest was established in 1946 by the Municipal Council of North Cowichan, and since it is directly owned by the community, it does not have the same tenure requirements that the CLCFC has under a tree farm licence. For the sake of brevity, research was limited to the CLCFC as it forms more of a contrast with Ixtlan, thus allowing greater recognition of the diverse experiences perhaps too easily grouped as community forestry.

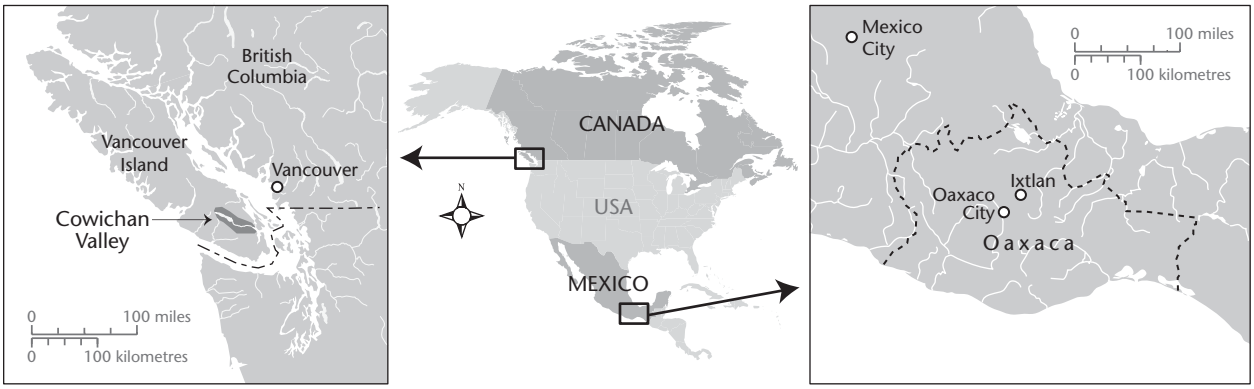

FIGURE 1. The location of the Cowichan Lake Community Forest Co-operative (CLCFC) in British Columbia, and the Ixtlan Communal Forestry, Agrolivestock and Services Organization (Unidad Comunal Forestal, Agropequaria y de Servicios Ixtlan, or UCFAS) in Oaxaca.

forestry a prominent role in national forest policy (Bray and Marino-Perez 2002; Tyler *et al.* 2007).

This article provides a conceptual review of the definitions and ideals underpinning community forestry, and evaluates the possible relationship of ecosystem-based resource management and community forestry. In particular, by using the Mexican and British Columbia case studies, it explores the ways in which local context, forest policies, and political history have constrained or limited the potential of community forests to manage their landbase in innovative and ecologically sensitive ways.

Community Forestry and Community-based Forest Ecosystem Management

Most discussions about community forestry conclude that it is a process involving many complex and interacting factors (Asbjornsen and Ashton 2002; Kusel 2003). It is important to start by considering what is meant by community. From a sociological point of view, a community has a shared geography, a collective identity, and structural integration (Bowyer-Smith 2000). The precise form of these characteristics, however, will be largely shaped by the cultural circumstances of the region in question. Gray *et al.* (2001b) stress that "communities of place" share interest in a common geographic area and primarily define themselves through belonging. Advocates of community-based resource management have emphasized that communities are small spatial units, that they are homogenous in social structure, or that their members share social norms (Agrawal and Gibson 1999). But these assumptions are not always warranted. Settlements created by industrial concerns may be divided on class or ethnic/racial lines and lack social cohesion (Marchak 1983; Bowyer-Smith 2000), but the common experience of economic exploitation or inheritance of a degraded landscape may also induce new perspectives and alliances. Communities may also be mobile; for example, harvesters of non-timber forest products often travel through seasonal cycles of relocation and cannot be seen as spatial units although they may share social norms and structure (Jones *et al.* 2002; Carroll *et al.* 2005). Assumptions surrounding the definition and behaviour of communities can also lead to the invocation of "community" to infer images of coherent, long-standing, and localized sources of authority tied to what are assumed to be intrinsically sustainable resource management regimes (Brosius *et al.* 1998). Communities may be best thought of as "elusive and constantly changing" (Berkes 2004:623), or recognized as "the interface between the complex and changing dimensions of community, real and imagined, and the equally complex dimensions of sustainability" (Pierce 1999:277).

It is also crucial to ask how past experiences with external industrial control of natural resources have led to processes of resistance and the development of alternatives. For example, a history of mill closures can reinforce "a pervasive sense that workers and communities in the province are increasingly vulnerable to an ever more globally integrated and footloose forest industry" (Prudham 2008:182), and in many cases, forces communities to take it upon themselves to seek new economic opportunities where they will not experience the same lack of control.

A community forest in any form should include some representation of the desires and resources of a given community. Krogman and Beckley (2002) interpret a community forest as an entity that has an explicit mandate and legal decision-making authority to manage a given landbase for the benefit of the community. The forest in question is no longer merely stands of trees, but also becomes a source of new ideas about the local ramifications of resource management and company profit structure. Thus, a community forest might represent a new kind of forest, wherein not only scientific management goals are central. The direction of economic output of the forest and the social impacts on the people in the region should also be a consideration. It is an organization of people, not merely a logging operation or a place on a map. It may or may not have forest management plans that involve ecosystem management.

The British Columbia Community Forest Association (BCCFA) currently states that one of its objectives is "the restoration of forest ecosystems as a basis for social, ecological and economic health,"[2] and that the degree to which a community forest manages for diverse goals on the landbase depends on their location. However, in British Columbia, community forests are not required or expected to utilize ecosystem management principles. But as McCarthy writes, "individual community forests and the program as a whole grapple with the question of whether community forests ought to aspire to or be held to higher ecological standards than industrial forestry. Some communities see such a standard as an undue burden on operations that are already relatively small and undercapitalized in a highly competitive industry, and not in line with community priorities; others see it as the essence of community forestry and suggest that there is little point to tenure reform if it does not lead to higher environmental standards" (McCarthy 2006:94). The capital concerns of community forests and their unique structure within British Columbia are understandable, but it is still worth considering possible overlaps between ecosystem management goals and future community forestry when or if they reach a more stable position.

Community-based forest ecosystem management comes in many forms, and combines the socio-economic control afforded by a community forest structure with ecosystem-based management of the forest. Ecosystem-based resource management recognizes whole systems and integrates "ecological, social, and economic considerations at various scales across the landscape and over time" (Gray *et al.* 2001b:30). In the case of forests, it is concerned with the rates and patterns of forest harvesting, and how these affect watersheds and fish and wildlife habitat. It seeks to maintain ecosystems "to achieve a specific set of desired social benefits" and is thus "an anthropocentric concept" (Kimmins 1997:187). It is "an adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities."[3] Some authors have consistently linked ecosystem-based management with community control, conflating it with a shift away from top-down government management and a new focus on natural systems rather than artificial boundaries (Brendler and Carey 1998; M'Gonigle 1996; Tollefson [editor] 1998; Meffe *et al.* 2002). Mitchell (2006) proposed a notion of community forestry as an example of ecological democracy. It has been argued that conservation projects "can only be developed with knowledge of ecological limits and opportunities" (Salafsky 1994:449).

We cannot assume that all community forestry attends to ecosystem management, or that ecosystem management is a desirable and feasible goal for all communities (Kellert *et al.* 2000). Bradshaw (2003) also suggests that the potential of these arrangements cannot be fulfilled if the credibility and capacity of communities is assumed rather than interrogated. The following discussion of the case study forests examines their contexts and the degree to which each has been able to prioritize ecological goals.

Ixtlan de Juarez: Traditional Social Organization for Forest Management

Community forestry was widely implemented in Mexico in the 1970s, concurrent with the period of most intensive tropical deforestation and a sense that traditional industrial management regimes were at fault. Proponents have since promoted it as a means to avoid deforestation through increased community involvement and new incentives (Bray *et al.* 2005). By 1992, 40% of commercial timber production and 15% of milled lumber produc-

2 British Columbia Community Forestry Association. Our vision: Guiding principles. *http://www.bccfa.ca/about.php#principles*
3 Coast Information Team. 2001. Ecosystem-based management. *http://ilmbwww.gov.bc.ca/citbc/ebm.html*

tion in Mexico was from community forests (Bray and Wexler 1996).

Community forestry in Mexico is a product of both the politics of community power and government structures of forest management. Historically, 280 communities received nominal ownership of 97% of Mexico's forests under the *ejido* system. This reform, enacted by President Lazaro Cardenas between 1934 and 1940, fulfilled promises of peasant landholding set in place by the Mexican Revolution (Matthews 2002). There are distinct contextual meanings of community in Mexico; *ejidos* are new land grants for groups under reform processes. They are communities legally created under the precedent of Aztec tradition, but deployed since the Mexican Revolution to provide peasants with a landbase (Bray *et al.* 2006). These unique facets of agrarian law place great emphasis on the forest as property, and this ownership may be a factor in the success of community forest management. However, most *ejidos* are reluctant to move away from timber production in any way that would affect their economy. Under the terms of the North American Free Trade Act, they may need capital investment to diversify, at least towards value-added products (Thoms and Betters 1998).

Despite the traditional emphasis on community, forest resources in Oaxaca, the state where Ixtlan de Juarex is located, were actually controlled through the 1950s by foreign concessionaires. Local-level utilization of forest resources was banned; however, timber and charcoal were still obtained illegally and often with the connivance of local officials. To control these activities and reduce Mexico's dependence on imports, the national government established its own parastatal industries. These vertically integrated logging and processing firms held monopolistic purchase powers and logging concessions over large areas of forest. The mountainous Sierra Madre del Sur region, where the community forest of Ixtlan de Juarez is located, was controlled by the state-owned company Fabricas de Papel Tuxtapec (FAPATUX). A concession of 240 000 ha was granted to FAPATUX in 1958 for pulp production from the native oak and pine forests (Matthews 2002). Revenues were dispensed to a central fund accessible only by application, and recipient communities were required to build roads or schools as directed by the company. While community members were employed as loggers by FAPATUX, and the company built skills and capacity through its paternalistic employment structure, indigenous knowledge was consistently discredited (Matthews 2002).

By the 1970s, two intertwined sources of dissatisfaction could be discerned. The policies of FAPATUX, ostensibly oriented towards community development, were rigid, frustrating, and perceived as inadequate for those who lived under them. Secondly, the established best management practices were being questioned due to the changing ecological composition of Ixtlan de Juarez's forests.

While the state-led organization of forest industries was underway in the 1950s, forestry in Mexico shifted focus. Laws and practices from the first half of the twentieth century largely treated forestland in relation to agriculture. There was an independent forestry department from 1935–1939, which sought to conserve forests in face of continual clearance for fields, resin tapping, and logging. However, this was seen as anti-revolutionary, for it checked peasant use of the land and did not allow for the full development of natural resources. When forestry arose again in 1951, it was as a new force oriented towards industrial extraction in a modern, bureaucratic state (Matthews 2002). The standard silvicultural method of the 1950s was the Mexican Method of Forest Management (MMOM), a diameter limit selection process which only left smaller trees. Its administration required monitoring to enforce the limit size yet did not incorporate ecological considerations; thus, "claims of expertise had to be attached to the project of building a modern bureaucratic state, not to an independent ideology of environmental degradation" (Matthews 2002:21). This method of selective harvesting resulted in high grading and stands stocked with inferior trees. Disturbances of adequate size were not left to enable pine regeneration, and shade-tolerant oaks now dominate the forest. This has left a challenge for management in many communities harvesting according to MMOM guidelines (Lopez-Arzola 2005).

In Ixtlan de Juarez, the communities sought to prevent the renewal of FAPATUX's concessions. They achieved full rights to management in 1982 with relatively little opposition because they were highly organized and supported by reform-minded bureaucrats in the forest service (Matthews 2002). As Gibson *et al.* (2000) have suggested, the presence of forces such as non-government organizations or sympathetic political elites makes a major difference in how successfully local users can organize. These reformers strongly believed in *indigenismo*—that the indigenous people were ecologically sensitive guardians of resources and should be given land to compensate for past injustices. Furthermore,

the community members "self-consciously adopted the government rhetoric of development and protection of natural resources to support their claim to the forests" (Matthews 2002:24). The district of Ixtlan immediately took the lead in organizing the four communities of its region into a co-operative enterprise. Harvesting is done though a framework of logging permits designed with the intervention of university-trained foresters, but the forestry practices themselves are implemented within a community's own structures of common property management and authority (Klooster and Masera 2000). Revenues are distributed by the organizational committee and fund 80% of community projects, including a public transportation system and a local gasoline station.

Through application of traditional social organization, the community forest also claims to provide aesthetics, wildlife habitat, watershed protection, sustainable management of timber, and endemic species conservation (Ganz and Burckle 2002). Areas were zoned for restoration, protection, or production. Production forest currently constitutes more than half of the 13 425 forested hectares of the community. It is primarily harvested through single-tree selection, group selection, and seed tree systems (see Ganz and Burckle 2002). Generally speaking, the silvicultural systems are reliant on natural regeneration, and risk reversion to hardwoods. Many communities control competing vegetation by hand if regeneration is not occurring, but after three years, they give failed sites to farmers. Restoration is minimal at this point, and consists of erosion control in degraded alpine forests and reforestation on abandoned agricultural land. A range of forest types and conditions is classified as protected. These areas may be sacred, important for watershed protection, highly disturbed, or may not be fully understood, and may be set aside to meet the needs of species requiring late successional forest habitat (Ganz and Burckle 2002). While many of these areas may require restoration, the community does not have the necessary training and resources. It is questionable whether community silviculture exists in Mexico, save for a few cases where there is access to information, field data, and theory.

The CLCFC Experience: A Community Forest Licence

In British Columbia, community organization is not a fundamental part of the forest tenure system, particularly in comparison to Oaxaca. While many First Nations have communal land management, this is seen largely as an alternative and culturally based practice.

It has long been assumed that communities in British Columbia could be maintained by sustained yield policies; if a steady supply of natural resources existed, there would be stability (Reed 2003). In the 1950s, this was the position found in two Royal Commissions of Inquiry, the Sloan Commissions. Concerns emerged around increased demands for timber in an expanding industry, especially as shortfalls in timber supply became apparent in some regions. The first of these commissions investigated forest policy and set the stage for a transformation of industry that has been termed "the Fordist boom" (Hayter 2000). Despite its focus on corporate actors and large-scale projects, it also outlined many general aspects of local management (Sloan 1945). The second commission in 1956 continued the refinement of policies towards a balance of public and private interests. However, by 1976 the report of the Pearse Commission questioned the capacity of the existing forest tenure policy to meet changing needs, and warned the forest industry to anticipate increased government and public involvement (Pearse 1976).

These changes would come to places like Lake Cowichan due to recession and the crisis in industry in the late 1980s. At that time, forestry employed 91% of the work force in the region. The Cowichan area is a group of small towns located near Cowichan Lake, an inland body of water on southern Vancouver Island. Vancouver Island has been and continues to be a significant region for industrial forestry. Many of its communities are considered forest-dependent (Reed 2003; McCarthy 2006), or defined by territory, interest, and attachment to the industry.

The Lake Cowichan region became an important logging centre in the early twentieth century, with several towns and sawmills present by 1950. Companies such as MacMillan Bloedel Ltd. dominated the forest industry, and smaller companies were increasingly absorbed into this monopolistic structure. Harvesting methods were mainly clearcutting, but without consistent regulation for reforestation. This resulted in a severe shortage of sawmill-quality lumber by 1981, which quickly affected smaller mills (Marchak 1983). During the 1980s, Fletcher Challenge Canada Ltd. became the major corporate presence, and had more of an interest in pulp and paper than in the more competitive, labour-intensive, and volatile lumber market (Rajala 1993). This led to the closure of an area mill and drastic cutbacks. Fletcher Challenge blamed its predecessors, British Columbia Forest Products, for log shortages and overcutting that had put them in this position. The labour union

demanded that a new system be formed in which they had local control. There was a range of support from the area for this idea. Discussion of community tenures had also occurred informally among environmentalists, First Nations, and forest workers in the late 1980s (Hammond 1990, 1991; Cashore *et al.* 2001).

As in Ixtlan de Juarez, the backing from contacts within local government was key to the development of the community forest. A core group was formed by people from the Village of Lake Cowichan; the Industrial, Wood, and Allied Workers of Canada Local 1-80 Holding Society; Cowichan Lake and District Chamber of Commerce; the Community Futures Development Corporation for the region; and the Cowichan and Chemainus Valleys Ecomuseum Society (British Columbia Ministry of Small Business, Tourism and Culture 1997).

In 1992, this committee proposed the creation of a 3000 ha community forest. Funding came from the Cooperative Development Branch and Forest Renewal British Columbia (Watts 1997). Forest Renewal B.C. was a crown corporation that derived its income from stumpage payments, and supported a range of environmentally based forest renewal activities. These funds covered the initial development costs of incorporation and preparation of a timber licence bid. The committee then realized that it needed more forest management expertise, and the province made forestry consultants and staff available on demand (B.C. Ministry of Small Business, Tourism and Culture 1997). The relatively late appearance of this consultancy process suggests that regional economic development may have been of much more immediate concern to the committee than ecological considerations.

The CLCFC was incorporated in 1995 under the Cooperative Association Act of British Columbia.[4] Like other community forests created in British Columbia during the 1990s, it took the form of a conventional volume-based tenure (Teitelbaum *et al.*2006). By this time, the provincial government was ready to license a harvest of 18 000 m^3 of timber per year from the Arrowsmith Timber Supply Area (TSA) to a deserving community organization. They gave the licence to the CLCFC. The Arrowsmith TSA is an integrated management unit that covers much of southern Vancouver Island. Its annual allowable cut (AAC) or annual rate of harvest from a specific area is determined by the B.C. Ministry of Forests and Range, and a review of its supply is performed by the chief forester every five years (British Columbia Ministry of Forests 2000).

In 1996, the AAC for the Arrowsmith TSA was set at 400 000 m^3. The CLCFC then contracted out its licence to TimberWest Forest Ltd. to log and process its timber at the Youbou Mill (now closed) to stabilize Cowichan area employment (80% of realized profits were dedicated to creating and sustaining employment, further supporting the importance of community revitalization).[5]

The CLCFC listed diversified use of forest benefits in its charter: education, public awareness programs, encouragement of environmental stability, recreation, control of harvesting and aesthetics, improved landscape values, and alternative forest producers (Watts 1997). Forestry was to be practiced responsibly and carefully, with due consideration for the land and its environment while maintaining harmony with the laws of the land (B.C. Ministry of Small Business, Tourism and Culture 1997).

The CLCFC licence is volume-based, with an AAC of 14 885 m^3. But it logs variably according to market conditions (Watts 1997). In 2001 an audit recorded a 20 000 m^3 harvest. The Forest Practices Board concluded that the CLCFC was compliant with the Forest Practices Code of British Columbia in all significant respects; thus, the CLCFC was allowed to vary its cut at a time when other types of licences in British Columbia could not. The Board determines compliance as "more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board."[6] This audit was unable to assess ecological protection because the Vancouver Island Higher Level Plan—established by the B.C. Ministry of Forests to invoke the force of law in the organization and protection of management zones—did not set specific objectives for the operating area of the licence. There was mention in the audit of the CLCFC's attention to riparian areas, karst features, marbled murrelet habitat, and other resources. However, many of the silvicultural obligations of the Forest Practices Code,

4 Cowichan Lake Community Forest Co-operative. History. *http://www.cowichanlake.ca/bus/forestcoop/history.html*
5 Cowichan Lake Community Forest Co-operative. Welcome. *http://www.cowichanlake.ca/bus/forestcoop/home.html*
6 British Columbia Forest Practices Board. 2001. Audit Summary of Forest Planning and Practices: Cowichan Lake Community Forest Co-operative Forest: Licence A52027. *http://www.fpb.gov.bc.ca/AUDITS/arc42/ARC42.pdf*

such as establishment of free-growing stands, had not been utilized at the time of the audit. As a result, the CLCFC could only be assessed at that time on the basis of its forest development plan.

Community Forests and Contexts

Two case studies cannot represent the worldwide array of community forest projects. However, a comparison of Ixtlan and the Cowichan region illustrates how decisive context can be in determining the activities of a community forest.

The unique context of each community shapes its goals and affects the capacity and character of any ecosystem management plans. In the case studies of the CLCFC and Ixtlan, two key factors for better ecological management of community forests are (1) the degree of ownership or control and (2) the degree to which the forest ecosystem may already be affected by past harvesting practices.

In Ixtlan, the community was historically circumscribed as an *ejido* and its cohesiveness stemmed from culturally specific forms of property law. In the Cowichan region, the Village of Lake Cowichan took a central role in identifying a broad geographic community of scattered towns across the Cowichan Valley that had a shared experience of industry employment and recession.

An analysis of the disturbance ecology of the Lake Cowichan and Ixtlan regions is beyond the scope of this paper. However, it is possible to assume that management decisions in a community forest will not be based solely on future harvesting plans, but will also be shaped by the opportunities or constraints of past logging activities. For example, the people of Ixtlan may now be directly working on new ways to manage their forests because their successional landscape was shaped by the impact of high grading and MMOM practices prior to community ownership. We cannot infer that every resident of the Ixtlan region understood the ecological basis of these practices. However, the strategies used to obtain local control of FAPATUX's concessions implied that past harvesting had led to inferior forests, and that a community forest would enable far better practices, thus assuring higher quality timber from more productive forests. In the Cowichan region, the driving force for a community forest appears to have been primarily based on the uncertainty that economic fluctuations had brought to the industry through the 1980s.

The convergence of local control with better ecological management may be political strategy in some community forests. But a review of the goals of a given community forest may help determine what is actualized. A project intended to manage for ecological objectives needs clear, specific technical guidelines (Salafsky 1994). The language applied to more environmentally minded forest management may be seen as vague in the CLCFC's earlier documents. What, precisely, is "due consideration for the land and its environment," especially given the legal constraints that apply to offsetting AAC against other forest values, such as biodiversity? It seems that this was clarified by 2006, when the CLCFC prepared a Forest Stewardship Plan in conjunction with Teal Cedar Products Ltd. as per British Columbia's *Forest and Range Practices Act*.[7] This plan included more specific ecological considerations. Most importantly, Teal Cedar was operating across the timber and tree farm licences surrounding the CLCFC, so higher levels of landscape continuity became possible (Teal Cedar Products Ltd. 2006).

Community forests in British Columbia are subject to reviews and other practices that may help measure their attention to ecological goals. The B.C. Ministry of Forests and Range's Community Forest Agreement Program (CFAP) requires an assessment of progress halfway through the lease. The assessments provide key information about each forest's level of compliance with six main objectives. In events such as wildfires or depressed markets, holders are encouraged to describe how they were limited by these external factors (B.C. Ministry of Forests 2004). The CFAP also sets normal environmental standards.

Challenges and Questions in Localized Ecosystem Management

Technical assessment of forest ecosystems in community forests in Mexico has included systematic censuses of target populations analyzed with statistics or geographic information systems mapping of density and biomass. A comparative study of forest cover change in preserved and community-managed land in Mexico revealed that areas under a common property regime and solid social structure can be maintained very effectively, although

7 British Columbia Ministry of Forests and Range. *Forest and Range Practices Act*. http://www.for.gov.bc.ca/code

forest cover is just one indicator and does not signify possible changes in composition (Klooster and Masera 2000; Duran *et al.* 2005). Cost limitations may require another approach, such as the targeting of indicator species known to be sensitive to certain types of habitat disturbance (Salafsky 1994). Causal factors are highly changeable, however, and it may be difficult to develop any comprehensive plan (Pagdee *et al.* 2005).

Although monitoring is important anywhere, it may be particularly significant in Mexico where limited site-specific data exists (Thoms and Betters 1998). Traditional ecological knowledge (TEK) or local information has received increasing priority in many co-management structures worldwide. However, there is often a sense that these inclusions do not fully take into account the contextualized and culturally contingent nature of this knowledge (Nadasdy 1999). Moreover, working with both TEK and western ecology can be difficult (Usher 2000). The scientific classification of a species may not necessarily coincide with a local concept or grouping, or there may be several common names for one species (Carter 1996).

Social and political considerations are also important. In many cases, no monitoring has existed, with the assumption that delineation of natural areas automatically equals protection. In Ixtlan, this could be a serious issue; other local interests, such as ranchers, might easily pillage the protected zone if there is no regulation or funds for enforcement. If intensive monitoring by a non-government organization or technocratic scientific elite exists, it may exclude the community, so it is important that training be provided. This should involve a two-way exchange of ideas and culturally functional practices, and not be an imposition of western frameworks of knowledge. Then a community forestry project will have succeeded in increasing the capacity of its participants while also equipping them to work for forest health. This is an ideal that is difficult to reach. For example, Klooster and Masera (2000) remark that few communities in Mexico have been truly able to integrate traditional social structures with the business demands entailed by commercial forestry.

Ultimately, the success of a community forest to manage for more ecologically minded goals relies not only upon local context, but also on the tenure system and the degree of local control that it enables. Reports on alternative forest management in British Columbia have concluded that an ecosystem-based approach for community forestry cannot be achieved simply through the creation of more community-based tenures within the existing system (Burda et al. 1997; M'Gonigle 1996). Even if a community holds a licence, its management is determined within the regulatory framework of forest tenure (Burda 1998). It has been proposed that this lack of local control could limit community initiative for responsible stewardship in the long term (Bowyer-Smith 2000) and some, such as Gray et al. (2001a), have argued that a shift from a focus on output to stewardship can create high levels of community capacity.

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Community Forestry and Expectations in British Columbia

The idea of more responsible management of forests has resonated in British Columbia for decades. Land use has become hotly debated, and critiques of industry and government policy come from both environmental and academic perspectives. Some contend that the forest resource has been mismanaged and specifically challenge the AAC as being set above ecologically sustainable levels (McIlveen and Bradshaw 2006). While some critiques are comprehensive and take into account the economic aspects of forest management, they may also downplay or reject the possibility of any market-based adjustments, instead placing emphasis on a reformist role for legislation, or on idealistic and unproven ecological goals. For example, reallocation of forest land within a comprehensive planning and legislative reform process has been suggested, with a phasing-out of industrial tenures, *particularly volume-based licences* (emphasis added) (Burda *et al.* 1997). But if large licences are broken into smaller community units, it could become difficult to manage for landscape-level ecological processes. Uses in one zone can immediately affect processes in another. For example, deforestation can impact down-slope water quality and soil conditions. The CLCFC is 3000 ha (as compared to the 13 425 ha held in Ixtlan), and is bordered by private land, an access road, and Tree Farm Licence 46, which is held by TimberWest (British Columbia Forest Practices Board 2001). Thus, it cannot really attend to ecological objec-

tives requiring a continuous landscape for management. To resolve this issue, community forests could be larger, or there could be concerted co-ordination with adjacent tenure holders. The latter approach would be consistent with the Sustainable Forestry Initiative certification held by TimberWest.[8]

It may also be unrealistic to expect legislation to be the sole avenue of change. The local economy is a primary consideration for communities that seek new tenure arrangements. There may be an argument for bringing environmental forest values into the marketplace in a macro-economic sense. There has been significant interest in using market-based mechanisms to promote new types of benefits, and the forms of and actors in these systems of incentives have been diverse (Sedjo *et al.* 2005). However, there is some evidence that markets for ecosystem services do not augment rural development. These markets may require a certain amount of capital, skills, and technology. They can involve large-scale economies and demand long-term investment. They may also produce or exaggerate local power differentials, providing new opportunities for elite stakeholders to profit.

Community forests in British Columbia have been recently described as small tenures with big expectations (Ambus *et al.* 2007). Their origins, however, were modest in both scope and innovation (Cashore *et al.* 2001). Yet early community initiatives such as the CLCFC influenced the creation of the provincial CFAP in 1998. This began as a pilot project to test the feasibility of community forests, and has since expanded as a fundamental component of the provincial government's Small Tenures Program,[9] with 33 communities invited to apply for a Community Forest Agreement (CFA) by 2005. Most importantly, this new framework has allowed communities to create their own companies to manage harvesting in community forests, such as Alkali Resource Management in the Esketem'c First Nation community forest. These recent shifts towards new forms of local control may lead to future successes in innovation in the community forestry program.

The Role of Local Ownership and Tenure

Community forestry is described by Krogman and Beckley (2002) as existing on a continuum with zero local control and benefit at one end, and total control and benefit at the other (Figure 2). Using case studies, they tested whether benefits and concern for ecological management would increase as control increased. They concluded that these outcomes cannot be consistently equated with each other. However, the meaning of benefits on this continuum seems to focus primaily on economic measures. Further research is needed in order to broaden the notion of benefits through an understanding of ecosystem services, and to integrate ecosystem values more explicitly.

Figure 2 shows how the community forests of the Ixtlan and Cowichan regions fit along Krogman and Beckley's (2002) continuum. In both cases, forest policy decisions are made by communities or by people living in or near a landscape modified by timber extraction. However, the communities of Ixtlan have full ownership of the forest through *ejidos*. The CLCFC is a licence granted to a community within an industrial tenure system. This difference in ownership may determine the extent to which each community forest is able to extend control or even wishes, economically speaking, to extend control to the development of ecosystem management.

Even in a situation of complete local ownership, costs and benefits are central. If users do not expect that the benefits they will receive from local control (e.g., more sustainable yield or a better water supply) will exceed the up-front as well as continuing costs of daily management of a forest, then they may not invest in improving the institutions of their community (Gibson *et al.* 2000). Innovation in forest management can only come about through the combined effort of all levels of governance, as well as industry. It is not enough for a government to simply download responsibilities. The empowerment and maintenance of communities is crucial (Bradshaw 2003). For example, many have noted the unwillingness of B.C. Ministry of Forests and Range staff to accept and

8 In 2000, TimberWest became the first Canadian company to achieve third-party sustainable forest management certification for its private lands under the American Forest and Paper Association's Sustainable Forestry Initiative SM licensing program. (TimberWest. Certifications. *http://www.timberwest.com/certifications.cfm*)

9 The Forest Investment Account (FIA) is a provincial government mechanism for promoting sustainable forest management in British Columbia. It includes a Small Tenures Program, which encompasses woodlots and community forests. In 2003, the provincial government proposed to double this program. In total, small tenures account for an annual cut of 3.3 million m^3, which is less than 5% of the provincial cut (see Cathro *et al.* 2007).

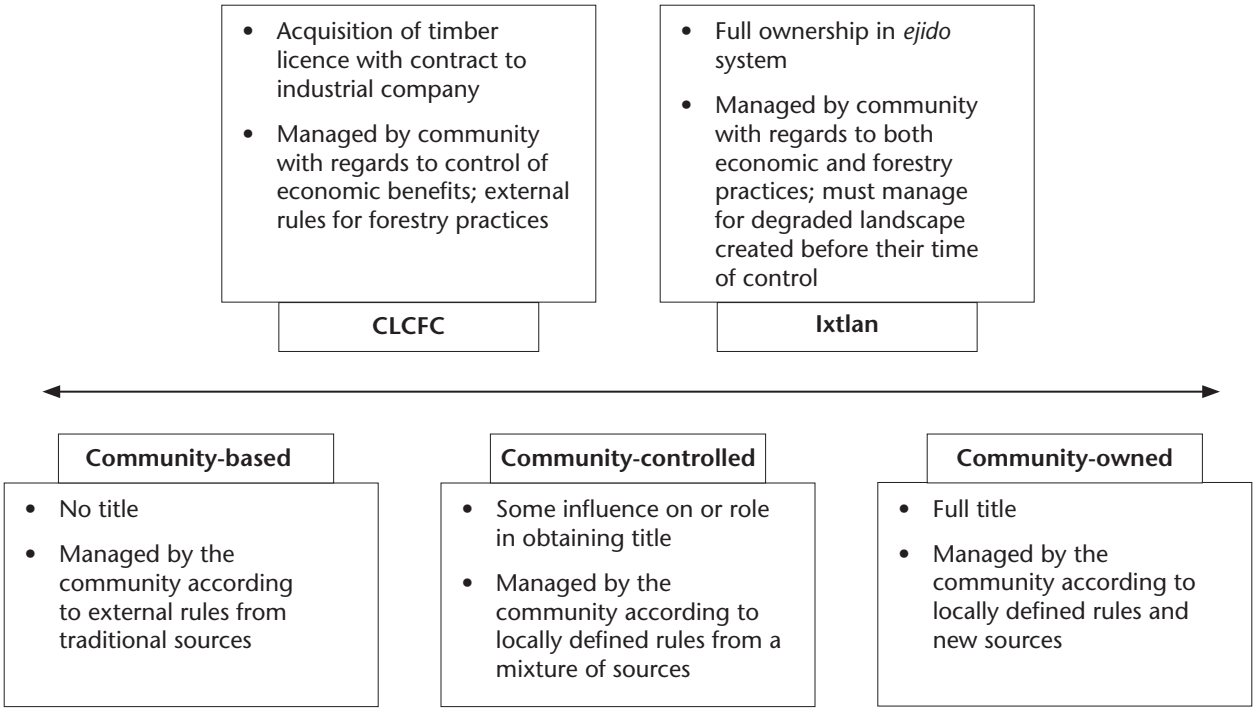

FIGURE 2. Continuum model based on Krogman and Beckley (2002) showing the relative definitions of community forest management, and where CLCFC and Ixtlan fit along the continuum. An arrangement placed toward the left end of the continuum has less control over forestry management than one toward the right.

accommodate the unique nature of community forestry. Policy has been largely limited to issues of stumpage and tenure, without paying explicit attention to innovation (Hayter 2000; Haley 2001). A recent review of the Community Forest Pilot Project indicates that although more community forests are in place, they are still based on the conventional revenue appraisal system, which encourages high-volume timber extraction (Meyers Norris Penny and Enfor Consultants 2006). In addition, community forests do not receive tangible provincial support (McIlveen and Bradshaw 2006). In both Mexico (Thoms and Betters 1998) and British Columbia (M'Gonigle and Parfitt 1994; Schooling and Cumming 2005), scholars call for more comprehensive programs of community forestry with consistent institutional support. This is indeed a challenge for government. The marginal costs of incorporating new communities can be high, and the distribution of technical forest services uneven (Bray 2005). Communities as well as government must also be prepared for the social costs of undertaking a community forest project. Difficulties in reaching consensus, finding an appropriate structure for organization, and in "getting off the ground" financially are all concerns.

Conclusions

The case studies of the Cowichan and Ixtlan regions reveal that community forestry is a slow and iterative process (Asbjornsen and Ashton 2002) and that community forests cannot be expected to structure their operations around ecosystem management unless those goals are in line with the priorities and capacity of their community. This capacity will be dependent upon a given community's historical experience, as well as on the levels of funding and support that are available from the region and province. Another significant factor is the operating conditions of the forestry company contracted to harvest within the community forest.

A community forest is an entity of people and resources that will cycle through various highs and lows as it develops over time and as operating conditions change. After years of somewhat singular efforts like the CLCFC, the CFAP is now active and expanding, and the British Columbia Community Forest Association helps organize and advocate community forestry in the province. These institutional supports aid the entire process of creating new forests for communities in ways that did not exist when the CLCFC began operating.

This article suggests that community forestry is diverse, and that local control should not consistently be equated with more ecologically based practices. It has pointed to the ways in which community forestry in British Columbia is part of an industrial system. However, it is not a detached academic critique of the efforts that numerous people and organizations have invested in the process, but is an account of *where* community forests *have been* at home and abroad, and might help indicate *where they are going*. Over time, an increase in meaningful levels of local control not only over profits, but also resource management—including the development of skilled workers within communities—can be expected. In Mexico, community cohesion led to the creation of community forests like those in Ixtlan before and during the 1990s, but it was only in 2003 that the new Forest Law offered significant policy commitments. Community forestry in British Columbia is growing and has immense potential to contribute to changes to the tenure system. However, in its current form of slow devolution, it has served to bring some types of change before others. Community forests in British Columbia may be moving along the continuum of control as they develop individually and as part of the tenure system, and the degree of ecosystem management possible can be expected to change with time and in accordance with local goals.

As the CFA and other policies evolve, more meaningful forms of local involvement in forestry will become possible. The case studies have shown that over time economic goals might be the first outcome of a community forest. We might expect the capacity to work on better ecological plans to come later, once the system gains more experience and more room has been made for alternative types of tenure. A reallocation of profits and a higher degree of employment certainty are significant benefits that community forestry can now provide. This is crucial, particularly in the wake of the mountain pine beetle infestation and the downturns caused by the slumping U.S. housing market. However, the CFA has yet to be fully tested as a better vehicle for ecosystem management. The rules for innovation in ecological and political grey areas such as non-timber values have yet to be set. Thus, comparison with older community forest models, both within the province and around the world, is of value. Future support for and expansion of the community forest role in the tenure system with clear guidelines for innovation and best practices are recommended in order to help community forests live up to expectations.

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Test Your Knowledge . . .

New promises, new possibilities? Comparing community forestry in Canada and Mexico

How well can you recall some of the main messages in the preceding Research Report? Test your knowledge by answering the following questions. Answers are at the bottom of the page.

1. Mexico's national Forest Law, which gave community forestry an expanded role, was passed in which year?
   A) 1989
   B) 2006
   C) 2003

2. In this article, which of the following is not mentioned as a factor in community forest capacity in British Columbia?
   A) The relationship of the B.C. Ministry of Forests and Range and Natural Resources Canada
   B) The constraints of the British Columbia tenure system
   C) The local context of each community forest

3. How does the Cowichan Lake Community Forest Co-operative's allowable annual cut vary?
   A) According to mountain pine beetle uplifts
   B) According to market conditions
   C) It depends on allowable annual cuts in other small scale tenures

ANSWERS

1. C 2. A 3. B