

Are Community Forests Successful in British Columbia?

An evaluation of the socio-economic success of
the community forestry in British Columbia using
Criterion 6 of the Montréal Process

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Executive Summary

Community forestry has recently begun to take hold in British Columbia. Though its origins lay as far back as the 1950's, official government tenure agreement was only recently introduced in the late 1990s. In the last 5 years the community forestry has grown at an unprecedented rate currently totaling 58 projects either in full operation or at some degree of planning. Some applaud community forests as a way to revive struggling rural communities, while guaranteeing more ecologically friendly land management practices. However, with low lumber prices, concerns about the midterm timber supply, and the rising Canadian dollar, the viability, sustainability and socio-economic success of community forests has come into question. This paper attempts to evaluate the socio-economic success of four community forests of British Columbia using Criteria 6 of the Montréal Process. To be determined successful the community forests had to demonstrate at least 50% fulfillment of indicators within each element of Criterion 6. Furthermore, the community forests were ranked after having been evaluated. Results were compiled into a master table which revealed that according to the paper definition of success; all four of the community forests were determined to be socio-economically successful. However, it was also determined that if these findings were to be extrapolated on to all community forests, additional research and more specific indicators would have to be included.

Key Words: Community Forestry, Montreal Process, Success, British Columbia Forestry, Forest Policy, CFA, BCCFA, Monitoring, Assessment, Sustainable Forest Management

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Introduction

In recent decades forest management actions and values have become more prominent in the public conscience. With this, there has also been a shift towards greater community involvement with its nearby forestry practices. In British Columbia, community forests now account for 1.2 million m³ of the annual harvest and this number is continually increasing (British Columbia Community Forest Association, 2011). The community forestry movement prides itself on its ability to execute sustainable forest management, a goal of all forestry conducted in British Columbia. Sustainable forest management (SFM) requires actively managing for economic, environmental and social values. However, there is little discussion on whether community forests have been successful at achieving that goal. Of particular difficulty for these small tenures is the maintenance of socio-economic stability. One tool that has been developed to assess sustainable forest management within non-European boreal and temperate forests is the Montréal Process. This paper uses the 6th Criteria of the Montréal Process to evaluate whether four sampled community forests have been successful at achieving socio-economic sustainability.

Success

When one attempts to answer the question of whether something has been “successful” or “a success” the need for clear definitions and bounding criteria are immediately apparent. Success is notoriously difficult to define and justify. It is a relative term that describes the “favorable outcome of something attempted” (Oxford English Dictionary). Despite its nebulous nature, with a clearly defined set of parameters, evaluation tools, and scales, one is capable of determining success.

Often a set of objectives or parameters for success are established prior to evaluation. This can be an absolute value (or range of values) that must be met or it can be placement on a relative scale. For example, the community may define success as creating 50 new jobs per year. Or, the community may define success as creating more jobs than a rival community. Quantitative measures such as the prior example are easy to use in evaluation because they yield simple yes or no results. Qualitative measures, on the other hand, are more difficult to use in evaluation because they do not. These results can be used by ranking responses against one another based upon content. A comparative ranking system requires justification and subsequent analysis to explain outcomes. Whether the benchmarks for success are quantitative or qualitative, absolute or relative, there needs to be a clearly defined process for evaluation. While there are many evaluation processes to choose from, the most common one is the criteria and indicator process because it can be used not only as an evaluative tool for a given set of values or principles, but it can also guide the formation and implementation of management plans. Because this paper is focused on the socio-economic aspects of SFM within in the context of BC’s

community forests, it will utilize Criterion 6 (and its associated indicators) of the Montréal Process to evaluate how successful four of BC's community forests have planned for the "maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of society".

Community Forestry in British Columbia

From Concept to Tenure Agreement

The idea of community forestry has existed in BC for nearly seventy years despite that the formalized Community Forestry Agreement (CFA) tenure that is known today was only established in 1998 (Harshaw, 2000). The early roots of community forestry are found within the concept of 'sustained yield' advocated by the Sloan Royal Commission in 1945 (Harshaw, 2000). Sloan's focus was on maintaining an even flow of logs to the mills, but he was also interested in local governance and their ownership rights local timber (British Columbia Community Forest Association, 2011). The first movements toward municipal level tenure were made when the city of Mission, in 1948, placed a thousand hectares in a forest reserve via the Municipality Act (District of Mission). The Mission Municipal Forest was expanded in 1958 when it was granted Tree Farm License (TFL) 26 by the Provincial Government.

The recommendations of a second royal commission, led in 1976 by Peter Pearce, stated that:

"The sensitive balance between timber production, recreation, and other non-commercial forest uses that are particularly valuable close to centres of population can in these cases be struck locally, making resource management highly responsive to local demand." – www.bccfa.ca

However, it wouldn't be until 1993 that another municipal TFL would be granted, TFL 56 to the Revelstoke Community Forestry Corporation, via recommendation of the 1991 Forest Resource Commission (Harshaw, 2000). In 1998, in response to a number of growing concerns including: how forests were being managed by larger licensees, softwood lumber agreement and subsidy concerns, a need to move towards a more market-based pricing system, issues surrounding first nations opportunities, the growing need for diversification of the tenure system, and the need to support struggling rural forestry dependent communities; the BC government, via amendments to the Forest Act, created the Community Forestry Pilot Program . Of the 27 communities that applied, seven were granted five year pilot agreements (Ministry of Forest, Lands, and Natural Resource Operations, 2011). By December of 2000, official CFA Regulation was passed, formalizing the scope of practices allowed by a CFA.

The program grew slowly at first, but once the viability of this form of tenure was established, the government continued to expand it. The most notable period of expansion was in 2003 following the enactment of the Forest Revitalization Plan by the minister of forests, Michael de Jong. This effectively set aside over a million cubic meters of the provincial annual allowable cut (AAC) to “small tenure expansion”. This roughly translated to 300,000 m³ of AAC for the community forestry program, which allowed for the program to expand by 16 more communities (Mccarthy, 2004). Furthermore, there was a transition to probationary agreements that allowed the communities a five year initial term that upon completion and approval could be extended to a 25-99 yr agreement.

As of March 2011, there have been 23 replaceable 25 year CFAs established, 20 probationary CFAs issued, and another 12 invitations to apply for a CFA. This brings the program to a total involvement of 55 communities, many of which are either held by first nations or partnered with first nations (British Columbia Community Forest Association, 2011). Furthermore, new invitations are no longer subject to five year probationary periods, but rather, upon approval, are granted a 25 year replaceable agreement.

Community Forests Defined

For the purpose of this paper, it is not necessary to have a government issued CFA to be considered a community forest. The definition of a community forest, for the purposes of this paper, is borrowed from the British Columbia Community Forestry Association (BCCFA), which defines a community forest as:

“any forestry operation managed by a local government, community group, First Nation or community-held corporation for the benefit of the entire community. At its core, community forestry is about local control over and enjoyment of the benefits offered by local forest resources.” –www.BCCFA.ca

This is an important foundational definition because of the variety of community forests in British Columbia. From size and type of tenure (TFL, Wood Lot, CFA) to business structure (Corporation, co-operative, municipal business, First Nation partnership), every permutation of community forestry is employed in British Columbia. As a result of these differences, there is also a broad spectrum of management structure. The general trend is that as the size of the community forest increases, so does the hierarchal nature of the business structure. Larger cuts require more on-the-ground and in-the-office planning. As a result, there are an increased number of employees to manage, which require business and management structures that can handle higher levels of production. Diversity of community forests is a natural result due to the variability of markets and community profiles across British Columbia.

Sampled Community Forests

The original concept behind this study was to include five community forests that would represent the variety of ways that community forests operate in British Columbia. Due to time, data constraints, and responsiveness from community forest managers, four community forests were selected for review (see table 1). Though the data and conclusions would be more informative given a greater sample number, the four community forests that were sampled do reveal a thin slice of the variation in community forests. A brief of introduction to the community forests sampled for this paper is found below.

District of Mission Municipal Forest (DOMMF)

The Mission Municipal Forest was the first community forest in British Columbia. Established in 1958 with the granting of TFL 26 (10,500 ha) by the Provincial Government, the Mission Municipal Forest currently has an AAC of 43,400 m³. As of December 20th 2010, the District of Mission was ISO 14001 certified, which acknowledges it as having an accredited Environmental Management System in place. They also have developed a sustainable forest management plan, but as of yet have not decided to become a certified forest via any of the major forest accreditation bodies: Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or Canadian Standards Association (CSA). Five to seven people are employed year round by the municipal forest. There are numerous outreach programs and events held within the forest such as, annual mountain bike races, school group tours, and TV/movie filming. Harvesting and silviculture work is very well done by using a variety of intensive forestry practices such as topping for wind firmness of leave trees, pruning, thinning, and fertilization (District of Mission, 2010).

Harrop-Procter Community Forest Co-operative (HPCFC)

The Harrop-Procter Community Co-operative (HPCC) was first established in 1999 as a branch of the Harrop-Procter Watershed Protection Society (HPWPS), to manage the Harrop-Procter Community Forest (HPCF). The HPCC is responsible for the operation of Harrop-Procter Forest Products (HPFP), as well as the development for their eco-tourism opportunities. Interestingly, any person is capable of owning a lifelong share in the HPCC, but to be elected to the board of directors, one must be a member of the HPWPS. A probationary CFA was issued in 1991 and full CFA status was granted in 2004 (Ministry of Forest, Lands, and Natural Resource Operations, 2011). The current ACC of the 10,860 ha area is 2,603 m³. Only two people are employed fulltime, the forest manager and the office manager. By having the second smallest annual cut of any CFA and the smallest ACC/ha (.24 m³/ha), the HPFP is most concerned about preserving the watershed for future generations. The result is a mix of silviculture systems including, single tree selection, seed tree systems, shelter wood systems, and small patch cuts. The timber from these small cuts supports HPFP. In 2010, a total of 40 ha spread over 3 blocks were

planned for harvesting using seed tree and shelter wood silviculture systems. The HPCC is involved in numerous outreach opportunities including annual tours, ecology walks of the community forest, and open-house meetings to discuss the forestry operations with the community members. Furthermore, the community forest directly supplies the Traditional Timber Framing Company which builds homes exclusively from wood from the HPCF. Currently the HPCF is one of few community forests that have attained forest certification from FSC (Harrop-Procter Forest Products, 2009).

Revelstoke Community Forest Corporation (RCFC)

The RCFC was established in 1993 when it was granted TFL 56. The RCFC is 120,000 ha with an AAC of 100,000 m³. Similar to the Mission Municipal Forest, the RCFC is entirely owned by the City of Revelstoke. This is reflected by its board of directors which is composed of the city mayor, the city administrator, two city councilors, and three appointees from the City of Revelstoke. The RCFC is able to employ five people fulltime. Clearcut with reserves is the dominant silviculture system, though there is minor experimental thinning in Douglas-fir stands occurring within the community forest. Given the steep topography, most of the timber is harvested using cable yarding systems, though there is a large amount of ground based harvesting and a little helicopter logging. In 2005, the RCFC became an SFI certified forest and still maintains rigorous environmental procedures. The RCFC is direct partners with 3 major local forestry businesses: Downie Timber, Joe Kozek Sawmills, and Cascade Cedar. Despite a reduced cut due to expanded caribou habitat areas, the RCFC continues to make a profit (RCFC Holding Company LTD, 2008).

Wetzin'Kwa Community Forest Corporation (WCFC)

The WCFC was established in 2006 to manage the jointly awarded of 22,400 ha CFA KP2 to the town of Smithers and the village of Telkwa. WCFC comprised of a seven member board of directors, is responsible for ensuring that sustainable forest management is actively pursued on the ground and that the economic benefits of the community forest are responsibility redistributed within the Bulkley Valley community. With all of the forest management and harvesting being contracted to local contractors such as Silvicon Services, the WCFC does not fully employ anybody fulltime (Wetzin'Kwa Community Forest Corporation, 2010). From its AAC of 30,000 m³ the WCFC has been able to establish a community grant program using the WCFC's yearly profits. In 2009, the grant program gave away \$90,000 and in 2010 it gave away \$110,000. Estimated economic benefit to the Bulkley Valley from the establishment of the WCFC was 1.5 million¹in 2008 (Wetzin'Kwa Community Forest Corporation, 2010). Community outreach and shared decision making is a crucial element of the WCFC as outlined in their

¹ This number was estimated by the WCFC using their operating costs because all of their costs came from using locally available contractors and products.

memorandums of understanding with the Smithers Community Forest Society, the Bulkley Valley cross-country ski club, and the Wet'suwet'en First Nation. Furthermore, Hudson Bay Mountain ski area is within the CFA boundary adding additional community planning and outreach opportunities for the WCFC.

Table 1 Basic structure and size of sampled community forests.

Community	Structure	Tenure	AAC / Area	Certification	Employees
Revelstoke	Private Corporation	TFL 56	100,000 m ³ / 119,000 ha	SFI	5
Wet'suwet'en Smithers	Private Corporation	25 yr CFA	30,000 m ³ / 22,400 ha	N/A	0
Harrop- Procter	Co-op	25 yr CFA	2,603 m ³ / 10,800 ha	FSC	2
Mission	Municipal Corporation	TFL 26	43,400 m ³ / 10, 500 ha	ISO 14001	5-7

Why is the success of community forestry important?

The success of community forestry should be of importance to the province and the public because of its social, economic and environmental repercussions, and the pursuit of the triple bottom line. The triple bottom line is a term that embodies the concept that a firm should be evaluated not only on its financial performance but also on its social and environmental performance (Norman & McDonald, 2004). Ideally this would cause firms to more completely consider the ramifications certain strategies and actions. Unfortunately, the formal reporting that does acknowledge social and environmental bottom lines beyond a firm’s financials are still no indicator of a firm’s true intentions and have often been cited at rhetoric (Norman & McDonald, 2004).

As of 2006, more than 600,000 of the 2 million people that live outside of metropolitan Vancouver live in rural communities (BC Stats, 2006). This fact alone should indicate that in order to foster greater social sustainability across the province, rural communities should be supported. Community forests support rural communities by encouraging participation and by providing members with a sense of place and ownership that promotes stewardship (Gunter J. , 2010). This form of local empowerment helps to stabilize communities that may otherwise collapse into larger economic centers. As members of the community develop a greater sense of stewardship, environmental awareness increases. An extreme example of this is the HPCFC which harvests less than 50 ha annually out of a 10,800 ha land base

(Harrop-Procter Forest Products, 2009). Furthermore, it is easier for people to understand the impact of human activities on ecosystem resources, such as clean water because the environmental externalities (positive or negative) of industrial actions are a burden of the community. This again promotes more environmentally sustainable decision-making and raises the priority of environmentally sensitive management decisions (Charnley & Poe, 2007).

Community forests also have important local and provincial implications. At the local level, community forests help to stimulate forestry dependent employment by providing jobs that have been lost due to the down-sizing of larger forestry corporations (Hood, 2011). While, the small size AACs apportioned to community forests, limit their ability to provide jobs, it is still an important benefit that fortifies rural communities. The most economically nourishing prospect of community forests is the retention of revenue. The traditional management of forests in British Columbia has been dominated by large corporations whose head offices are often distantly connected with the areas and communities where their harvesting takes place. Hence, much of the revenue from these harvesting activities is extracted from the community from which they took place. With community forests, the revenues generated from forest activities are kept almost entirely within the community. For example, profits from the Likely-Xat'sull community forest partnership were used to purchase a new ambulance for the community (Hood, 2011). From a provincial perspective, community forests offer an opportunity to diversify the tenure system, which some argue is greatly needed (Haley & Nelson, 2007). Furthermore, by allocating a greater proportion of the AAC to smaller community-focused tenures, a more market –based stumpage system becomes a reality, which is important in appeasing international trade pressures.

Montreal Process: An Evaluation Tool of Sustainable Forest Management

Montreal Process Background

In the fall of 1993 in Montréal, Quebec, a panel of international experts was convened, with the support of the Conference on Security and Cooperation in Europe, to deliver a seminar on possible criteria and indicator frameworks for measuring sustainable forestry practices in boreal and temperate forests. European countries decided to work within the Ministerial Conference on the Protection of Forests in Europe. Their efforts would later become the Pan-European Forest Process (a precursor to the Helsinki Process). It was decided that non-European countries with boreal and temperate forests needed an international set of criteria and indicators of their own. The Montréal Process working group, with Canada as its leader, was formed in June of 1994 in Geneva, Switzerland to develop and hone the criteria and indicators for sustainable forest management in non-European countries. The working group included: Australia, Canada, Chile, China, Japan, Republic of Korea, Mexico, New Zealand, Russian

Federation, and USA. After a year and several meetings, the final set of 7 criteria with a total of 67 indicators was published in conjunction with a statement of endorsement called the “Santiago Declaration”.

Montreal Process Defined

The Montréal Process is intended to be used as a reporting tool on the sustainability of forest management in non-European temperate and boreal forests. A criteria and indicator framework was chosen because it is a simple and robust way of judging how well management strategies fulfill broader values. As such, it becomes not only an evaluation tool of the implementation of sustainable forest management (SFM) at the national and international level but also an internationally agreed upon guide towards achieving SFM. Member nations are encouraged to use and consider the values underpinning the criteria of the Montréal Process when tailoring a national framework for SFM. In turn, the fundamental characteristics of such a process permeates it way to the core of forest management in British Columbia: the “on-the-ground” planning documents (FSP, SFMP, MP, SP, etc.) of forest tenure holders.

The Montréal Process is comprised of 7 criteria and 67 associated indicators. Due to their breadth, some criteria have been broken in to specific elements (see table 2). Criteria 1-5 are intended to establish a strong foundation for evaluating the environmental impacts of forest management. Criterion 6 is intended to assess the social and economic sustainability of current forest management practices, while Criterion 7 is meant to be a national evaluator on the political implementation tools in place for creating a political environment that is conducive to support and maintenance of SFM. This paper will focus on using the 6th criterion and its associated elements and indicators to evaluate the success of social and economic sustainability of community forests in British Columbia.

Table 2 Montréal Process Criteria and Elements of Criteria.

Criterion	Specific element of criteria
1. Conservation of Biological Diversity	1.1 Ecosystem diversity 1.2 Species diversity 1.3 Genetic diversity
2. Maintenance of Productive Capacity of Forest Ecosystems	N/A
3. Maintenance of Forest Ecosystem Health	N/A
4. Conservation and Maintenance of Soil and Water Resources	N/A

5. Maintenance of Forest Contribution to Global Carbon Cycles	N/A
6. Maintenance and Enhancement of Long-term multiple Socio-Economic Benefits to meet the Needs of Societies	6.1 Production and Consumption 6.2 Recreation and Tourism 6.3 Investment in the forest sector 6.4 Cultural, social, and spiritual needs and values 6.5 Employment and community needs
7. Legal, Institutional, and Economic Framework for Forest Conservation and Sustainable Management	7.1 Legal framework 7.2 Institutional framework 7.3 Economic framework 7.4 Measure and monitor changes 7.5 Conduct and apply research and development

Montreal Process Implementation

Since the Santiago Declaration, the working group has employed the Montréal Process to publish two overview and country reports, one in 2003 and one in 2009. These reports provide an update on how the member countries are performing against the indicators of the Montréal Process. However, they are presented in a very qualitative and general sense. This is especially true of the overview report which highlights trends and progress within and across the countries, but does not arrive at any conclusions as to whether forests are being managed sustainably. There is neither a mention of benchmarks that would establish sustainable forest management. Much this is the result of an inability and or inaccuracy of data collection, which the reports are quick to highlight. Regardless of data difficulties, there is still no scientific definition that can supported with conclusive evidence as to whether the member countries have been successful in their attempts to sustainably manage forests. A similar trend has been seen with its application at the state/provincial level (Brown, 2006). This extends to the finer scale of socio-economic sustainability of forest management. Many criterion 6 indicators are more prone to data collection issues such as, recreation volumes and number of jobs provided by forestry. Hence, this criterion may be just as far from establishing benchmarks for SFM compared to other criteria and the process as a whole.

Montreal Process in British Columbia

The Montréal Process as stated before is not binding legislation in any country and is not worded to be used or enacted as regulation for practices. Nonetheless, its core principles are quite influential in Canada via the Canadian Council of Forest Ministers. The CCFM is a body composed of the ministers, deputy ministers, and assistant deputy ministers of each province responsible for the management and

stewardship of forests and associated natural resources. This national council is responsible for the design, guidance, and future vision of SFM in Canada. Thus, it should not be surprising that their criteria and indicator framework (CCFM - C&I) for the monitoring of SFM in Canada is nearly identical to that of the Montréal Process. In British Columbia, however, forestry management is a provincial responsibility that is primarily regulated through the forest stewardship plan (FSP) review process. This effectively reduces CCFM C&I to suggestions for how SFM should be implemented, not legal obligation. Despite this, recent changes in end-user needs and wants as a result of non-government environmental awareness groups (Greenpeace and Forest Ethics) have forced tenure holders to become certified via third-party certification schemes. The most common third party accreditation bodies in Canada are FSC, SFI, and CSA. Unsurprisingly, the third-party standards for SFM are very closely related to those of the CCFM and their work with the Montreal process. Thus, the Montreal Process has very real implications for forest practices and management in BC.

Rationale for Choosing Criteria 6

If the success of a community forest is measured by its ability to implement and maintain effective SFM as deemed by the Montréal Process, then it must be able to sustainably manage for the environmental, social, and economic needs of the community as established by the criteria therein. The ability of community forests to tailor their forestry practices to manage for environmental values is well established (Gunter & Ambus, 2004). It is also well established that community forests employ techniques and strategies that are more effective in maintaining natural forest ecosystem functions and services than the large industrial forest companies of BC (Mccarthy, 2004). Thus, when one compares community forests across BC based on the first five criterion of the Montréal Process, it is very difficult to discern meaningful differences in their success as environmental stewards. They have all shown to be very successful in meeting the environmental criteria and indicators necessary for SFM designation. However, a much different result is revealed when one examines the socio-economics of community forestry. Many community forests are running debts and job creation proves to be difficult despite all the hopes and promises of the opposite (Hood, 2011). Jennifer Gunter, executive director of the BCCFA, hints in her article, "Community Forests: The Farmer's Market of the Forest Sector", that socio-economic factors are the key barriers to vibrant, successful community forests in British Columbia. This has been echoed by Robin Hood, past president of the BCCFA and Coordinator of the Likely-Xat'sull Community Forest who remarks that it is difficult for the community forest to generate jobs and wealth given recent lumber prices and meager AAC allocation. From these anecdotes and a preliminary revision of management plans it is clear that socio-economic indicators are more capable of exposing the differences in strategy and success of community forests in BC than are environmental indicators.

Methods

Criterion 6 as a Means of Separation

Success is evaluated by comparing the sample community forests based on their ability to satisfy the indicators of Criterion 6. The underlying assumption is that there will be enough difference between them such that they can be ranked. Thus, it becomes imperative that the results reveal a separation between the subjects. It follows then, that the greatest separation between subjects will be seen when evaluated against the object that is most difficult to fulfill. This, in combination to the above mentioned reasons (the difficulty in satisfying socio-economic goals) is why Criterion 6 has been chosen.

There are five elements of Criterion 6. These elements have been used to ensure that there are sufficient indicators to cover the breadth of socio-economic values. All of the elements, *Production and Consumption, Recreation and tourism, Investment in the forest sector, Cultural social and spiritual needs and values, and Employment and community needs*, are important to community forestry from the socio-economic perspective. They attempt to encapsulate what should be considered when attempting to maintain and enhance long-term socio-economic benefits of forest and forestry activities to address the diverse needs and values of communities.

Master Table

A master table (table 3) was constructed whereby each sampled community forest was ranked against the others for each indicator of Criterion 6. In order to be considered successful, the sampled community forests must be able to demonstrate that they fulfill at least 50% of the indicators in each element of Criterion 6. There are not any defined targets for the indicators given the specialized circumstances of each individual community forest. Therefore, if the community forest was able to fulfill an indicator to any extent, it was ranked against the other sampled community forests. Where a community forest wasn't able to demonstrate any fulfillment of an indicator, it was given a 0 and the other community forests were ranked from 2-4 to give greater weight to the fact that the indicator was not fulfilled at all. It should be noted that for some indicators there wasn't sufficient data to make any sort of judgment. Where no data was found or provided, the community forest was given an "ND". Also, many of the indicators are based on imports and exports, a reflection of the international nature of the Montréal Process. These indicators were judged as sales or volumes produced by the community forest because none of the community forests directly export or import products. The final line of the master table summarizes the rankings of the indicators for each community forest. A higher number indicates greater fulfillment of the indicator.

Evaluation Documents

The minimum required document was the Forest Stewardship Plan (FSP), a public document that is required for harvesting timber from provincially owned land (Crown land). In addition to this, all documents that could be obtained from the community forests, including financial statements, management plans, and sustainable forest management plans, were used in the completion of the master table. Where the documents left gaps, personal communication was attempted and used as substitute to fill the master table.

Results

The results indicate that the four community forests sampled are successful from a socio-economic perspective. Furthermore, the Wetzin`kwa Community Forest Corporation ranked highest amongst the community forests for socio-economic sustainability while the District of Mission Municipal Forest tied for last with the Revelstoke Community Forest Corporation. The RCFC and DOMMF were unable to satisfy three indicators, all of which were within the Production and Consumption element. Though borderline, this was enough for these community forests to achieve success. There was insufficient data to assess six of the indicators. It was particularly difficult to find data pertaining to the element "Employment in the forest sector". Only two of the five indicators for this element were capable of being assessed. Both of the leading community forests were CFAs and scored very well with questions pertaining to non-timber forest products. The community forests that held TFL tenure agreements did not have legal access to NTFPs. Forests with larger cuts scored better in the element "Production and Consumption" with indicators that inquired about timber and lumber.

Table 3 Master table. Summarizes results of each community forest compared to the other in terms of the indicators of Criterion 6 of the Montréal Process.

Element	Indicator	Community Forest			
		RCFC	WCFC	HPCFC	DOMMF
Production and Consumption	Value and volume of wood and wood products production including primary and secondary processing	4	3	1	2
	Value of non-wood forest products produced or collected	0	3	4	0
	Revenue from forest based environmental services	1	2	4	3
	Total and per capita consumption of wood and wood products in round wood equivalents	4	3	1	2
	Total and per capita consumption of non-wood forest products	0	3	4	0
	Value and volume in round wood equivalents of exports and imports of wood products	4	3	1	2
	Value of exports and imports of non-wood forest products	0	3	4	0
	Exports as a share of wood and wood products production and imports as a share of wood and wood products consumption	ND	ND	ND	ND
	Recovery or recycling of forest products as a percent of total forest products consumption	ND	ND	ND	ND
Investment in the forest sector	Value of capital investment and annual expenditure in forest management, wood and non-wood forest product industries, forest-based environmental services, recreation and tourism	4	2	1	3
	Annual investment and expenditure in forest-related research, extension and development, and education	1	3	2	4
Employment in the forest sector	Employment in the forest sector	3	0	2	4
	Average wage rates, annual average income and annual injury rates in major forest employment categories	ND	ND	ND	ND
	Resilience of forest-dependent communities	ND	ND	ND	ND
	Area and percent of forests used for subsistence purposes	ND	ND	ND	ND
	Distribution of revenues derived from forest management	2	4	2	3
Recreation and Tourism	Area and percent of forests available and/or managed for public recreation and tourism	1	2	4	3
	Number, type, and geographic distribution of visits attributed to recreation and tourism and related to facilities available	ND	ND	ND	ND
Cultural Social and Spiritual Needs of People	Area and percent of forests managed primarily to protect the range of cultural, social and spiritual needs and values (FN)	3	4	2	2
	The importance of forests to people (PAG size and participation)	2	3	4	1
Success (fulfillment of at least 50% of the indicators per element)		Yes	Yes	Yes	Yes
TOTAL (Higher is better)		29	38	36	29

Discussion

The Harrop-Procter and Wetzin'Kwa community forests ranked the highest amongst the sampled community forests mainly because they held community forest agreements with the provincial government. This gives them access to non-timber forest products (NTFPs) whereas the other two sampled community forests only have rights to timber. However, where NTFPs were not an issue, with in the element "Production and Consumption" cut size was nearly the sole determinant in the rankings. Unfortunately what the indicators don't reflect is the importance of the NTFPs. Though the HPCF and the WCFC have access to them there are no solid numbers provided to indicate that this is generating any sort of substantial economic or social capital. Research outside of this paper has shown that markets for NTFPs and their products are notoriously hard to access and can be quite fickle. The exception to this is mushrooms, which have a relatively large and stable market, but are difficult to find and hard to keep exclusive (Tedder, 2008).

Unsurprisingly, the two CFAs were able to score very well in the element "Cultural, Social, and Spiritual Needs of People". These indicators were qualitatively assessed by looking at the various management plans to determine which had higher emphasis on these values. Though not valued, the HPCF was created almost solely to ensure that the social and spiritual needs of people were protected. They have done this by reducing the logging that would have taken place on their watershed. Thus, what they gain in social values and ecosystem services they lose in timber production and economic performance. On the opposite hand, the WCFC turns its profits into grant money for the local community while also managing for a number of organized groups. Their recognition of social values has been clearly asserted by forming recognized partnerships with local community societies such as the cross country ski club. Furthermore, the WCFC board of directors includes the band chief as one of the four permanent directors. This demonstrates their commitment to incorporating First Nations' values into their planning.

"Investment in the forest sector" was another element that was influenced more by size of cut than anything other factor. Those community forests that have the largest cuts also have the largest investments due to the capital needed to cut at those scales. The RCFC was the most heavily invested community forest with millions of dollars invested in the corporation. The DOMMF also reflected high investment in the forest sector as a result of their use of numerous silviculture systems. Being municipally operated is an important factor because blown budgets can be passed on to the tax payer as unlike privately held corporations that must more carefully manage their assets and budgets to avoid bankrupting themselves. The DOMMF is also capable of bankrupting itself, but the risk of such is much less likely as a result of having tax-payer dollars and streamlined access to government funding.

There was a great deal of difficulty in finding employment data for the element “Employment in the forest sector”. This is a result of the complexity of the employment environment. The overwhelming majority of community forests use contractors for their services. It is typical to have a few fulltime employees if the cut is large enough to justify it. Robin Hood, president of the British Columbia Community Forest Association, estimates that a community forest needs about a 100,000 m³ AAC in order to employ a five person harvesting crew fulltime. The significance of this is that most community forests are only harvesting significant volumes of timber every couple years (once or twice in a five year cut control period). All of this complicates the question of just how many people are being employed by a community forest. A simplification of this issue was to only count those people that are employed fulltime, such as general managers and operations managers. This again seemed to be directly correlated to cut size (as explained above) with the exception of the WCFC which only has a board of directors and no fulltime employees. All of their work, including the managerial work is contracted. While this results in a poor ranking from the Montréal Process, it is a sustainable solution for the community if the contractors employed are from the community, which is exactly what the WCFC does. Furthermore, by not having any fulltime salaries to pay, the operating expenses are decreased and the profits are returned to the community through the WCFC grant program.

Recreation and tourism are very important to the social well-being of communities but again are difficult numbers to predict and assess, especially for small communities who don't have ticket booths at the community forest entrances. FSPs, are notoriously poor at reflecting these values because it is not a provincially mandated objective unlike, wildlife or timber. Nonetheless, some analysis is still warranted. An important factor of this Montréal Process element is proximity. Community forests that are closer to the town or community center are more likely to have increased visitation. The result of this is that managers and planners must devote more emphasis and attention to recreationists by providing trails, picnic areas, and safety precautions. Thus, their management plans allocate an increased amount of area to these values as well as reflecting an increased awareness and recognition of tourism and recreation. As with the prior elements, the size of a community forest is a key determinant of the amount of area that can be devoted to recreation and tourism. The more land a community forest has, the more it is able to allocate to recreation without gravely sacrificing timber yields. This requires that the area devoted to recreation be examined as a percentage of the entire community forest. Even by percentage, however, there is still a bias towards larger community forests because harvesting costs are so high.

Limitations of the Methods and Results

The paper was constrained by numerous limitations. The two most important limitations were the amount of data and the ability of the Montréal Process to evaluate the data. The BCCFA has over 50 members. Only four of these community forests were sampled in this paper. This is not a sufficient sample number to be making inferences across all community forests in British Columbia, especially given their variability. Other data constraints, as mentioned prior, were the availability of important documents such as financial statements, which are often closely guarded material. Many community forests are operating on very tight margins and thus do not spend the time and money necessary to provide data such as visitor and recreationist numbers. This reveals the next greatest limitation to the papers credibility, which is the use of the Montréal Process. Perhaps the most telling result of the data is how poorly the Montréal Process evaluates the socio-economics on a community scale. This is reflected in the generality of the indicators. For example, the indicator “the resilience of forest-dependent communities” is extremely vague and could comprise several other sub-indicators. The result of trying to fulfill such vague indicators is that a qualitative assessment of the documents was routinely employed. The Montréal Process is an international criteria and indicator framework. As such its application at the community level it left much to be desired.

Conclusions

Creating and maintaining socio-economic sustainability is a challenge for community forests in British Columbia. There is both anecdotal and numerical data to support this. This is a result of numerous external market pressures such as low lumber prices as well as political resistance to reallocate more AAC from larger companies to community forests. The result is extremely small tenures that have not been given the proper tools to be as socio-economically sustainable as they could be.

The four community forests sampled in this paper are socio-economically successful as evaluated by Criterion 6 of the Montréal Process according to the definition of success outlined in this document. Whether the definition of success that was created is appropriate is difficult to judge because, thus far, no governing body or institution judges success from the Montreal Process. The Montréal Process is used to report on trends and actions taken to identify sustainable forest management, but there aren't any benchmarks to determine if the current management actions are sufficient. This is in part due to the difficulty of data collection and data precision.

If the Montréal Process is to be a significant evaluation process at the community forest scale, data collection issues will have to be resolved, community-tailored sub-indicators will have to be developed, and benchmarks for successful sustainable forest management will have to be developed. This will require a greater investment by governments because of the difficulty involved with data collection and the time required developing benchmarks and more reflective indicators. If governments are serious about future sustainability then the benefits of increasing the funding and attention towards community forests will be recognized and pursued.

The results presented in the paper are not sufficient to provide meaningful headway on the issues presented. Nonetheless, they do illuminate places for improvement in the evaluation of the of sustainable forest management, particularly for a forest model as valuable as community forests.

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