ABSTRACT
The forest has long been a central component of the culture of Aboriginal Canadians, and opportunities for economic development in Aboriginal forestry are emerging in several areas. The amount of forest assets managed by Aboriginal peoples has been increasing as well as the types of business relationships Aboriginal peoples are engaged in are expanding. However, the development of Aboriginal capacity in the forest sector is varied. The educational and skill-levels of Aboriginal workers in forestry is improving, but the average age of the Aboriginal workforce has steadily increased, which reflects a rapidly aging underlying demographic. While the median total income for Aboriginal workers in the forest sector has increased, the number of Aboriginal workers in the forest sector has steadily declined. Further, average income drastically varies depending on whether an individual is on or off-reserve. The earnings of off-reserve Aboriginal forestry workers are very close to those of their non-Aboriginal counterparts, while on-reserve forestry workers are earning less than half of what non-Aboriginals make. Benchmarking these trends is important as it facilitates the continued tracking of the role of Aboriginal peoples in the forest sector as it changes and new areas of opportunity develop.
INTRODUCTION
The state of Canada’s forest sector and forest resources are assessed periodically by a number of groups, including the Canadian Council of Forest Ministers, provincial governments, industry associations and environmental groups. These reports examine a wide range of indicators, including social, economic, and environmental criteria. Aboriginal involvement in the forest sector is often an area of consideration when assessing the sustainability of forest management, but rarely do these reports explore or consider the breadth of criteria and indicators for Aboriginal participation in forestry and the community well-being to be derived from it.

The forest has long been central to Aboriginal culture, but its importance in relation to employing individuals and creating jobs in communities is difficult to measure. Currently, Aboriginal forestry is gaining importance in its contribution to the forest sector’s performance and sustainability as First Nations assume increasing responsibility for the management of forest lands. With that, Aboriginal youth are being identified as crucial to the growth and maintenance of a natural resources labour force, and Aboriginal forestry businesses are growing in significance within regional and national economies. It is therefore timely to consolidate and share the collective knowledge on the state of Aboriginal forestry—in terms of its capacity, its opportunities and its impacts.

This paper provides an overview of Aboriginal forestry trends glimpsed from readily-available statistical data and other sources. Due to this limitation, the definition of Aboriginal forestry is constrained in this paper to the practise and execution of forest based activities for economic development (vs. non-commercial traditional use or other activities practised for cultural reasons) both on- and off-reserve by Aboriginal communities.

I. OPPORTUNITIES FOR ABORIGINAL FORESTRY
In the face of the recent economic downturn in the forest sector, organizations such as the National Aboriginal Forestry Association (NAFA) have encouraged Aboriginal communities to expand their interests in forestry, and to diversify their activities on forested lands. Some emerging markets that NAFA is identifying as opportunities for Aboriginal communities include non-timber forest products, value-added wood products, and forest carbon management.1 These opportunities are echoed by the Canadian Council of Forest Ministers as top priorities for supporting forest sector transformation, but while they are vast and varied, their pursuit often requires Aboriginal communities to have access to and control of forested lands. Indicators of Aboriginal access to and control of forest lands include benchmark measures of (a) Aboriginal-owned lands and assets; (b) Aboriginal-held tenures to Crown forests, including responsibility for managing forests; and, (c) the emergence of alternative and collaborative business relationships.

(a) Forest Assets

- Trend: Increasing

While the size of reserve lands varies from group to group, on a national scale there has been a growth in reserve land hectarage since the early 1990s, with projected increase until at least 2022.

Aboriginal communities are managing ever increasing sizes and volumes of forest timber assets. Self-government agreements, land claim settlements, treaty land entitlements, and additions to reserves have to-date triggered transfers in control and management responsibilities for almost 1.8 million hectares of land to First Nations, with another 1.4 million hectares pro-

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FIGURE 1
Growth in reserve land hectarage — actual and projected (in thousands)

![Graph showing growth in reserve land hectarage](image)


Projected to be transferred by 2022 (Figure 1). Much of this is forested land, which presents numerous forest-based economic opportunities to Aboriginal communities. However, the size of holdings across First Nations is varied, with only two groups holding more than 50,000 hectares, and 31 holding more than 10,000 hectares. On-reserve holdings rarely afford communities the opportunity to sustain commercial opportunities comparable to those operating on Crown lands.

As a result, a growing number of communities are also reaching out towards forest-based opportunities by securing Crown land co-management, tenure, and licensing arrangements with industry and the provinces/territories. While measurement of forest assets are important, these findings should be understood in conjunction with Aboriginal-held tenure.

(b) Aboriginal-held Forest Tenure

Trend: Increasing

Nationally, Aboriginal communities have seen an increase in forest tenure and the tenure types they are receiving are granting them greater stewardship and responsibility for Canada's forests.

Forest tenure is a system which encompasses the “terms under which a forest manager or owner possesses the rights, and assumes the responsibilities, to use, harvest or manage one or more forest resource in a specified forest area for a specified period of time.”


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development is obtained via a variety of processes administered by the provinces. Recent increases in the amount of Crown forest tenure and harvest allocations being awarded to Aboriginal communities, reinforced by increasing levels of responsibility for Crown forest management is resulting in an important opportunity for accessing into the forest sector. Between 2003 and 2006 the total wood volumes allocated across the country through Crown tenure arrangements increased by 12 million cubic metres with almost one-third of this increase being allocated to Aboriginal communities.3

In 2006, Aboriginal communities across Canada held tenure representing access to an annual harvest allocation of 11.7 million cubic metres of Canada’s Crown timber, up from 8.0 million cubic metres in 2003.4 Aboriginal-held tenures increased from 4.7% of the national total harvest in 2003 to 6.4% in 2006; an increase of 3.7 million cubic metres per year. This represents a 30.5% share of the 12.1 million cubic metre increase in harvest for the period.5 Allocations of Crown forest tenure to First Nations in British Columbia and Saskatchewan show the greatest increase over the period — increasing by 62% and 72% respectively.6 Quebec, Alberta and Manitoba show modest increases in First Nation-held Crown tenure while New Brunswick’s remained essentially constant since 2003,7 First Nations in Nova Scotia, PEI, and the NWT hold no tenure. An allocation of 15,000 cubic metres in 2006 was the only noted gain in Newfoundland & Labrador.

The level of responsibility for Crown forest management that Aboriginal communities are assuming through tenure arrangements is also a telling indicator of emerging opportunities for participating in the forest sector. Longer term tenures have the most impact on Aboriginal groups as they provide a sustained financial opportunity and increased influence over Canada’s forests. NAFA currently distinguishes between four different types of forest tenures classified along a gradient that parallels increasing responsibility upon the First Nations to manage the forest. Groups I and II represent long-term tenure and significant timber volume supply while groups III and IV are primarily small-enterprise oriented tenures.8 Between 2001 and 2006, Group I tenures held by Aboriginal communities have increased by 16% despite a 9% decrease in the national harvest. Group II tenures held by Aboriginal groups also rose by 72% since 2003. The largest observed increase in holdings was for Group III tenures; now accounting for half of all Aboriginal allocations.9 Of the Group III tenures made available between 2003 and 2006, 92% were allocated to First Nations. Finally, Aboriginal-held Group IV tenure is limited to British Columbia and has decreased significantly.

(c) Business Relationships

A Trend: Increasing

Aboriginal communities are building business relations with forestry companies in a variety of ways establishing a strong foundation of collaboration between Aboriginal communities and the forest industry.

Relationships between Aboriginal communities and the Canadian forest industry are steadily expanding. These business relationships are important as they provide opportunities to the local population by allowing for increased skills transfer and development in these communities. Collaboration between Aboriginal groups and forestry companies can take various forms. Nationally, 60% of Aboriginal communities have treaties, agreements and/or memorandums of understanding (MOUs), while 59% have forest

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4 Ibid.
5 Ibid.
6 Ibid.
7 Ibid.
tenures and 58% are engaged in a contract or partnership with a forestry company. Excluding B.C., 43% of Aboriginal communities have treaty agreements and MOUs, 39% have forest tenures and 50% have economic partnerships with forestry companies. As well, 36% of these communities are participating in land use studies and 39% have influence or consultation on decision making. These numbers are particularly useful in benchmarking the current popularity of the various types of collaborative agreements used by Aboriginal communities with businesses.10 Furthermore, there is a growing policy voice representing and encouraging Aboriginal forestry on national and provincial levels. Examples of this include organizations like the National Aboriginal Forestry Association (NAFA), the B.C. First Nations Forestry Council and recent collaborations between the Assembly of First Nations (AFN) and the Forest Producers Association of Canada (FPAC). The AFN and FPAC together sponsor an annual Aboriginal forest entrepreneur award, recognizing individuals who have taken a leadership role in the sector and in their communities.

II. ABORIGINAL CAPACITY IN FORESTRY

There are a number of fundamental capacity issues that have historically limited full Aboriginal participation in the forest sector. These have included low levels of education, inexperience in business skills, inadequate financing and a range of social issues related to unemployment and poverty. However, increasing attainment of higher education, forest tenure and associated employment opportunities are providing the basis for Aboriginal people and governments to address these longstanding capacity concerns. This section will look at recent trends related to Aboriginal capacity in the forest sector derived from the 1996, 2001 and 2006 censuses allowing for a 10-year snapshot that captures the overall direction of Aboriginal forestry and where it may be heading. When dealing with Aboriginal census data, some have raised issue with the comparability of the 2001 census with previous censuses due to changes in question format and wording, instructions and data processing.11 While these concerns are valid, a 10-year capture of this data is still useful as a starting point as the data is available and reliable. Indicators of Aboriginal capacity in forestry include (a) workforce demographics and (b) education and skill levels.

(a) Workforce Demographics

△ Trend: Mixed

The percentage of Aboriginal workers employed in forest industry subsectors has increased but the age demographic of the Aboriginal workforce in forestry is getting older raising concerns as to sustainability.

The forest sector is an important source of current and future employment for Canada's youthful and growing Aboriginal population. Forestry firms are actively seeking to increase Aboriginal involvement in all aspects of the industry. The demographics of the current forest sector labour force, the close proximity of Aboriginal communities to forest resources and the need for a stable pool of skilled workers has positioned Aboriginal Canadians to play an increasingly important role in the sector.12 Forestry is the largest private employer of Aboriginal people of any natural resources sector. In 2006, Aboriginal direct employment in the forest sector was 13,500 jobs, representing 3.5 percent of the Aboriginal labour force (compared to 1.8 percent of the non-Aboriginal labour force employed in the forest sector), and 2.7 percent of the total forest sector labour force.

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As seen in Figure 2, Aboriginal workers contribute to all subsectors of the Canadian forest sector. These values show growth in labour force representation in every subsector over 2001 employment rates, but it should be noted that the bulk of jobs held currently by Aboriginal workers do not require high-skills sets.

A look at the age distribution of Aboriginal workers in the forest sector can be used to forecast future labour force trends. As seen in Figure 3, the largest age group working in the sector are 25–44-year-olds. However, there has been a decline in this group, decreasing around 19% between 1996 and 2006. The youngest age category, 15- to 24-year-olds, also saw a steep drop as well, falling 37%. 45–64-year-olds, the oldest age group, actually increased over the 10-year period indicating that workers in 25–44 age category simply shifted into the next age category as they grew older, meaning that many of the older workers in forestry have remained in the sector, despite decreasing labour force activity, while younger workers have moved into different occupations. If this trend continues, 45–64-year-old workers may overtake 24–44-year-olds as the largest age demographic in the Aboriginal forestry labour force. While this suggests an experienced work force, it also raises concerns regarding the sustainability of Aboriginal forestry as the workforce moves closer to retirement age without a large population of younger workers to replace them. Interestingly, statistics from the 2006 census indicates that Canada’s Aboriginal community has a large and growing youth population. Indeed the median age of Aboriginal people was 27, compared to 40 for non-Aboriginals, and Aboriginal youth constituted 17.6% of the Aboriginal labour force. 13 The Forest Product Sector Council, in their report titled “Renewing Canada’s Greenest Workforce” emphasizes the importance of attracting youth to the sector by highlighting the highly skilled and technological aspects of the work. They refer to Aboriginal youth as “one of the sector’s best hopes for a future labour supply” and will soon release a report on mechanisms to engage with this cohort. 14

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13 Ibid. p. 2
FIGURE 3
Age demographic of Aboriginal workforce in the forest sector (1996–2006)


(b) Education/Skills

△ Trend: Increasing

In the forest sector, the percentage of Aboriginal workers with no educational certificate is decreasing while the percentage of Aboriginal workers with a university degree is increasing.

Another metric to consider in Aboriginal forestry is the education level of Aboriginal workers compared to non-Aboriginals. Aboriginal workers in the forest sector are less likely overall, compared to non-Aboriginal workers, to lack educational credentials at multiple levels. In 1996, 61% of the Aboriginal labour in the forest sector did not have any educational certificate (including high school graduation), compared to 38% for non-Aboriginal workers. In 2001 the number of Aboriginal workers without credentials fell to 52% for Aboriginal workers and to 40% in 2006. Alternatively, non-Aboriginal rates dropped to 35% in 2001 and 26% in 2006. Overall, this indicates a shift in the forest sector away from workers who have no formal education, with Aboriginal workers trailing behind their non-Aboriginal counterparts in this trend.

On the opposite side of the educational spectrum are those with university certificates, diplomas or degrees. In the non-Aboriginal population, the percentage of workers in this category increased over the 10-year period, starting at 7% in 1996, rising to 9% in 2001 and 10% in 2006. For Aboriginals these numbers also increased, from 1% in 1996; 2% in 2001, and up to 3% in 2006. While a majority of the Aboriginal labour force do not have any kind of degree, diploma or certificate, the percentage of Aboriginals with a university education is increasing and Aboriginal foresters are well positioned to access high skilled positions, though there are many fewer of them distributed across the country. In terms of highly skilled labour within the Aboriginal labour pool, there were
TABLE 1
Education of workers in the forest sector (1996-2006)

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>2001</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal workers (total)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No degree, certificate or diploma</td>
<td>16865</td>
<td>16330</td>
<td>15945</td>
</tr>
<tr>
<td>High School Graduation Certificate</td>
<td>10320</td>
<td>8465</td>
<td>6335</td>
</tr>
<tr>
<td>Trades certificate or diploma</td>
<td>2815</td>
<td>3495</td>
<td>4615</td>
</tr>
<tr>
<td>Non-university certificate or diploma</td>
<td>2355</td>
<td>2885</td>
<td>2720</td>
</tr>
<tr>
<td>University certificate, diploma or degree</td>
<td>1130</td>
<td>1235</td>
<td>1790</td>
</tr>
<tr>
<td>Non-Aboriginal workers (total)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No degree, certificate or diploma</td>
<td>380860</td>
<td>348855</td>
<td>306200</td>
</tr>
<tr>
<td>High School Graduation Certificate</td>
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<td>80290</td>
</tr>
<tr>
<td>Trades certificate or diploma</td>
<td>97380</td>
<td>91355</td>
<td>92480</td>
</tr>
<tr>
<td>Non-university certificate or diploma</td>
<td>63900</td>
<td>61535</td>
<td>57160</td>
</tr>
<tr>
<td>University certificate, diploma or degree</td>
<td>45320</td>
<td>42195</td>
<td>46790</td>
</tr>
</tbody>
</table>


recently 225 Aboriginal forestry professionals and 800 technologists and technicians.\(^{15}\) As technical, maintenance and management skills are among those identified by forest sector employers as 'most needed' by their operations, Aboriginals should be well positioned to access those more capable positions, though possession of essential skills is also important.\(^{16}\)

III. PARTICIPATION IN ABORIGINAL FORESTRY

A third aspect to consider when measuring Aboriginal forestry is how opportunities and capacity have impacted actual participation in the sector. This section will consider the participation rate from 1996 to 2006 along with changes in earned income. As in capacity, the data for these sections are gathered from Statistics Canada, using Aboriginal census data. Two indicators in benchmarking participation in Aboriginal forestry are (a) participation rates in the sector and (b) earned income.

TABLE 2
Aboriginal participation rates in the forest sector (1996–2006)

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>2001</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal</td>
<td>83.4%</td>
<td>89.1%</td>
<td>90.3%</td>
</tr>
<tr>
<td>Non-Aboriginal</td>
<td>92.8%</td>
<td>92.7%</td>
<td>92.1%</td>
</tr>
<tr>
<td>Aboriginal (On Reserve)</td>
<td>78.3%</td>
<td>84.5%</td>
<td>86.2%</td>
</tr>
<tr>
<td>Aboriginal (Off Reserve)</td>
<td>86.8%</td>
<td>90.6%</td>
<td>91.4%</td>
</tr>
</tbody>
</table>


TABLE 3

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>2001</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Proportion of the Sector</td>
<td>4.7%</td>
<td>4.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Aboriginal (On and Off Reserve)</td>
<td>16885</td>
<td>16335</td>
<td>15950</td>
</tr>
<tr>
<td>Aboriginal (On Reserve)</td>
<td>5915</td>
<td>4195</td>
<td>3470</td>
</tr>
<tr>
<td>Aboriginal (Off Reserve)</td>
<td>10980</td>
<td>12140</td>
<td>12480</td>
</tr>
<tr>
<td>Non-Aboriginal</td>
<td>380855</td>
<td>343765</td>
<td>306230</td>
</tr>
</tbody>
</table>


only marginally different (with 90% for Aboriginal to 92% for non-Aboriginal). However, on reserve Aboriginal workers consistently have a lower participation rate than their off-reserve counterparts with difference gaps of over 8% in 1996, decreasing to 6% in 2001 and 5% in 2006.

In terms of real numbers in the labour force, Table 3 shows that there is a significant decrease in labour force activity across the sector. In particular, on-reserve workers in the forest sector have gone down from 7870 in 1996 to 3470 in 2006, a 56% decrease over 10 years, the largest in any of the categories. While the issue of the decrease in labour force activity is not a uniquely Aboriginal problem, as it is likely a response to the downturn in the forest sector, on-reserve Aboriginal workers were the most affected by this trend. Interestingly, the number of off-reserve Aboriginal workers increased over this period, indicating a transition of these workers off reserves. It should be noted that despite the decrease in Aboriginal employment in the forestry sector there was an increase in the participation rate in the same period. The reasons for this are unclear.

(b) Earned Income

Trend: Mixed

Off-reserve Aboriginal workers have seen significant increases in their median total income, with Aboriginal men effectively closing the income gap between them and non-Aboriginal men. However, on-reserve workers have fared poorly in comparison to their off-reserve and non-Aboriginal counterparts.

Another indicator for the state of Aboriginal forestry is trends in median total income
for individuals working in the sector. As seen in Table 4, on-reserve Aboriginal male workers have, and continue to have, lower median total incomes than their off-reserve counterparts. While this gap was close to $11,000 in 1996, it has since increased and in 2006 the difference between on and off reserve incomes for males was over $20,000. When compared to non-Aboriginal males in the same labour force, off reserve Aboriginal men made over $14,000 less in 1996. This gap has slowly closed and in 2006 this gap was around $4,000.

Overall, Aboriginal women in the forest sector have the poorest earned incomes. Off-reserve Aboriginal men consistently made more than off-reserve women; in 1996 the income gap was slightly under $12,000 and by 2006 the gap was over $11,000. The gap has not increased, but appears to have stayed the same at approximately 11,200 to 11,600. On-reserve Aboriginal women made even less than their off-reserve counterparts, with the gap starting at around $5000 in 1996, increasing to $11,000 in 2006. These trends indicate that Aboriginal women, both on- and off-reserve, are not keeping up with the median total income increases occurring for male Aboriginal workers or female non-Aboriginal workers.

CONCLUSION AND NEXT STEPS

As seen in Figure 4, Aboriginal forestry has recently seen many gains. Most of these increases are found in land-based opportunities where court decisions, treaty land entitlements, claim settlements and government policy initiatives have led to an increase in area of forests controlled and/or managed by Aboriginal people. However, compared to these gains, increases in capacity and participation in have not been as rapid. While earned income has increased for most, overall labour force activity has declined and the average age of those participating in Aboriginal forestry is increasing indicating that there is a paucity of new entrants to the field. However, it must be kept in mind that these falling numbers are part of a larger decline in the forest sector overall and Aboriginal youth will likely be key to supporting future re-growth in forestry, including being recruited to help replace upcoming retirements in the sector.

As the industry transitions, these numbers provide a benchmark for future research to determine if Aboriginal communities will see forestry as a good investment and develop their capacity to act on opportunities. The Aboriginal Forestry Initiative is the new Government of Canada approach to enhancing Aboriginal participation in the competitive and sustainable transformation of Canada’s forest sector. It is meant to support capacity building by facilitating knowledge exchange and coordination of federal and other forms of support for opportunity-ready Aboriginal forestry projects and partnerships.

This report provides a snapshot of quantitative and trend analysis which only gives a partial understanding of the overall story. While
FIGURE 4
Summary of opportunities, capacity and participation in Aboriginal forestry

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Capacity</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest assets</td>
<td>Workforce Demographics</td>
<td>Participation Rate</td>
</tr>
<tr>
<td>Aboriginal-held forest tenure</td>
<td>Education/Skill</td>
<td>Earned Income</td>
</tr>
<tr>
<td>Business relationships</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Statistics are easily measurable and readily available, it is just as important to look at qualitative sources to better flush out what is occurring on the ground, and how assessments of opportunities, capacity, and participation can be further improved. This can emerge from a variety of sources, including academic research in the industry and communities, analysis of developing sector trends (such as bioenergy or green wood), and discussion with the Aboriginal experts and elders. As the research on these parameters continues, more of these qualitative data sources will be incorporated to better encapsulate the voice of Aboriginal communities engaged in forestry. This article is meant to provide preliminary data as a starting point in moving forward towards more systemic tracking and reporting of Aboriginal forestry trends.

BIBLIOGRAPHY


