

## PROJECT SUMMARY

Ecosystem  
Management

Forest Productivity

Public Involvement

Adaptive  
Management

Developing and implementing Sustainable Forest Management Plans for both the Lakes and Morice Timber Supply Areas is the central objective of the Morice and Lakes Innovative Forest Practices Agreement. The adaptive management cycle and public involvement are both important components of this planning process.

# Indicators of Community Sustainability for the Morice & Lakes IFPA Region



Fraser Lake Sawmills



### Introduction

This research initiative develops a suite of indicators that can be used to assess the sustainability of human communities in the Morice and Lakes Timber Supply Areas (TSAs). The Morice & Lakes Innovative Forest Practices Agreement (IFPA) funded this study in an effort to enhance an existing indicator suite designed to monitor natural resource and socio-economic factors associated with sustainable forest management. This research was undertaken by the Canadian Forest Service, Social Science Research Group.

Several forest sector initiatives preceding this project have stimulated interest in the identification of indicators associated with the health and well-being of forest communities. These initiatives include the Canadian Council of Forest Minister's 'Criteria and Indicators' framework for sustainable forest management along with several national forest certification initiatives.

### Objectives

The objective of this project is to develop and measure a suite of indicators of community sustainability appropriate for application in the Morice and Lakes IFPA region. This suite of indicators builds on the existing IFPA indicator suite developed through scenario

planning exercises—connected to resource management concerns— while also developing indicators of socio-economic sustainability closely connected to the quality of life and the well-being of local residents.

### Methods

Two research approaches guided this study; one based on the academic literature on community sustainability and the other on a local understanding of community sustainability issues. An initial suite of indicators was developed using documents from sustainability studies recently undertaken in British Columbia. These indicators were then prioritized and refined using local input from interviews and workshops with IFPA region residents involved in key areas of their community. The final indicator suite was based on this feedback, and included over 40 indicators falling within the various community sustainability categories.

Indicators were measured using primary and secondary data. Primary data were collected using a random sample household survey administered throughout the IFPA region. The response rate for the household survey was 58%. Secondary data were obtained from local organizations, and provincial agencies, as well

as Statistics Canada census data from 1991, 1996, and 2001. Data were analyzed using basic descriptive statistics, generating a baseline or trend for the IFPA region and individual communities. In the case of primary data, findings established a baseline for future comparisons. When secondary data were available for multiple years, a trend was established for the region.

## Results

### The Indicator Suite

Indicators included in the final indicator suite are divided into two main categories: *capital* indicators (those measuring the resources and assets available to a community), and *outcomes* indicators (assessing whether the community is able to meet its desired goals).

Under the capital category are indicators associated with human capital, natural capital, economic capital and social capital. Human capital is the result of individual-level assets such as education, skills training, and ability to access employment opportunities. Natural capital refers to the natural resources and ecosystem services that support a community. Economic capital indicators measure inputs to the local economy, such as labour, and financial and physical infrastructure. The community-level factors that allow community members to work toward common goals are known as social capital.

Under the outcome category are indicators associated with ecological integrity, economic vitality, civic vitality, robust physical and mental health, and recreational opportunities. Ecological integrity indicators measure the well-being or health of the ecosystem. Economic vitality indicators are associated with economic outputs such as employment, economic diversity, poverty and entrepreneurship. The community-level outcomes contributing to community life, such as social support, volunteerism and satisfaction with the community is known as civic vitality. Robust physical mental health indicators assess individual health and well-being in the community, as well as health care infrastructure. Recreational opportunities is the last outcome category, which includes indicators assessing the quality and quantity of outdoor and indoor recreational opportunities in the community.

### Indicator Measurements

Indicator assessments reveal poor to fair performance in most of the capital domains (refer to Figure 1). Human capital measurements suggest that education attainment and school enrolment are low, while the population's own assessment of available choices for employment—measured through the community survey—is unfavourable. The number of individuals trained in the trades, however, has increased over time, despite the limited options for trades training in the region. Economic capital was one of the weakest categories in the indicator suite, owing to, in some communities, limited government services, municipal infrastructure funds, and community services available to support economic activity. Nevertheless, in most IFPA municipalities, median income in 2001 was found to exceed the provincial median. Furthermore, survey respondents gave positive assessments of labour force recruit-

ment and retention. Social capital indicators performed strongly throughout the IFPA region, revealing high levels of trust among community members and fairly strong commitments by residents to stay in the community. Racial discrimination, however, was perceived to a significant problem in the community of Burns Lake, a finding that coincides with Lakes district workshop participants' concerns. Indicators of natural capital were not assessed owing to the lack of standardized data. Although little data exist at present, there are several initiatives in the IFPA district that will soon be collecting or compiling data that could be used in future indicator assessments.

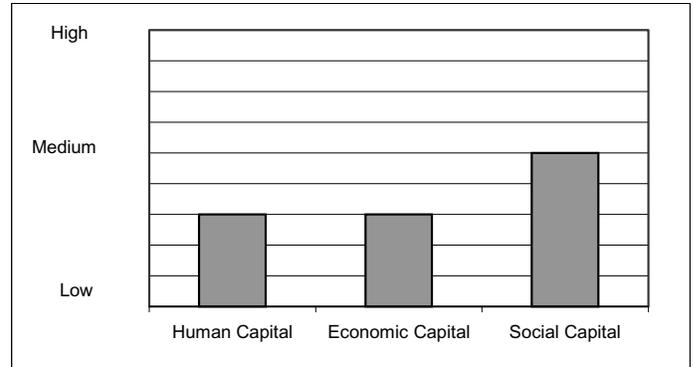


Figure 1. Performance of capital domains for IFPA region

Outcome indicators performed slightly better throughout the IFPA region (see Figure 2). Only a few indicators of ecological integrity were included, owing largely to a lack of available, standardized data, making it difficult to make an overall assessment. Two areas of concern, however, are the increase in red and blue listed vertebrate species in the last six years, and the small increase in air quality advisory (AQAs) days between 2001 and 2002, although AQA days during these years remain lower than they were in 1997 and 1998. Economic vitality indicators are particularly troubling, as they illustrate that the region has little economic diversity, an increasing unemployment rate that exceeds the provincial rate, and a rising number of low-income families. On a more positive note, the region has had some new employment opportunities created through local agency funding, and income leakage to outside regions—as reported by survey respondents—does not appear to be significant. In contrast to this economic vitality domain, civic vitality is very strong in the IFPA region, with most of the region showing strong levels of social support and volunteerism. Residents appear to have a strong sense of place, and are satisfied with many aspects of their community. A significant numbers of residents, nevertheless, provided negative assessments of local leadership and the quality of community debate. Under robust physical and mental health were mixed results with residents providing very positive assessments of their own health and stress levels, but poor assessments of local health care infrastructure. Local health care infrastructure is limited in the region, particularly in communities such as Granisle and in the Southside region of the Lakes district. Under the recreational opportunities domain results were also mixed. The IFPA region has an abundance of high quality outdoor recreational opportunities, but very few indoor opportunities.

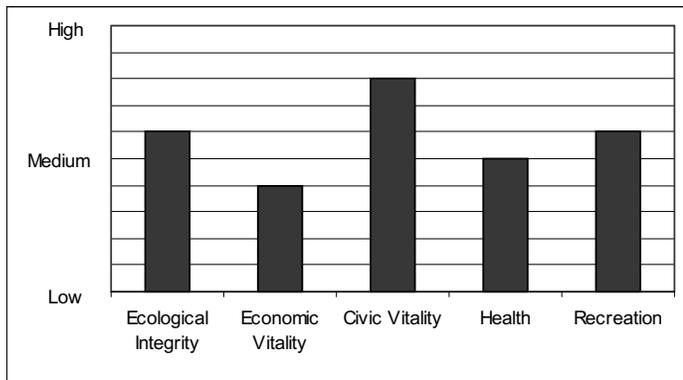


Figure 2. Performance of capacity outcome domains for IFPA region

## Discussion

Findings in this report will be of interest to two separate audiences: community organizations and leaders, and forest managers. While we emphasize that the indicator suite as a whole should be considered, we are able to highlight some indicators that may require more attention from community leaders and others involved in community planning. Based on the indicator assessments, the following issues appear to be critical at this time: low and decreasing student enrolment, limited access to basic community services and health care, perceived racial discrimination in Burns Lake, perceived substance abuse in most communities, rising incidence of low income, and a rising unemployment rate. IFPA communities were found to be performing well in areas of social support and trust, and as such, these areas may be tracked over time to monitor for any changes.

With regard to the forest management audience, findings from this study can be used to develop innovative strategies for community investment. Historically, forest companies have responded to needs within a community by investing in short-term requirements, such as recreational opportunities and educational programs. However, such investments are not always suited to enhance the long-term well-being of forest communities. The indicators of sustainability developed by this project go beyond these short-term considerations and can be used to support a broad strategic vision for community investment, allowing companies to actively support their host communities, while supporting the community's capacity to adapt to change and influence their own future. The indicator suite highlights several areas for such investment, including: the development of human capital, investment in substance abuse prevention programs, support for leadership development and entrepreneurship.

## Recommendations

1. Although this project develops detailed assessments of the IFPA region in key sustainability areas, it does not develop specific targets for performance in indicator areas, nor does it recommend how communities can improve their performance. Those who live and work in the community can most appropriately undertake these tasks. We recommend that communities use the results from this research in community planning efforts, and that forest managers use the results to guide sustainable forest management activities.
2. There are two recommendations for subsequent monitoring activities or future studies.
  - a. The involvement of First Nations communities in a separate indicators project to develop an indicator suite appropriate for the sustainability concerns of these communities.
  - b. Owing to the small number of natural capital and ecological integrity indicators included in this suite, efforts should be made to incorporate more of these indicators. The current Morice and Lakes IFPA suite of biophysical indicators provides such an opportunity.

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For More  
Information...



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