Empowering Indigenous groups with baseline data collection

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Abstract:

Following a period of absence of active mining, the Labrador Trough region currently hosts numerous proponents who will be required to establish baseline environmental conditions for their project areas. A portion of the Labrador Trough is also located on or near Innu and Naskapi communities, which have experienced the adverse environmental effects of iron ore mining activities on their land and traditional practices for several decades and will likely continue to experience effects due to future anticipated waves of mining projects in the region.

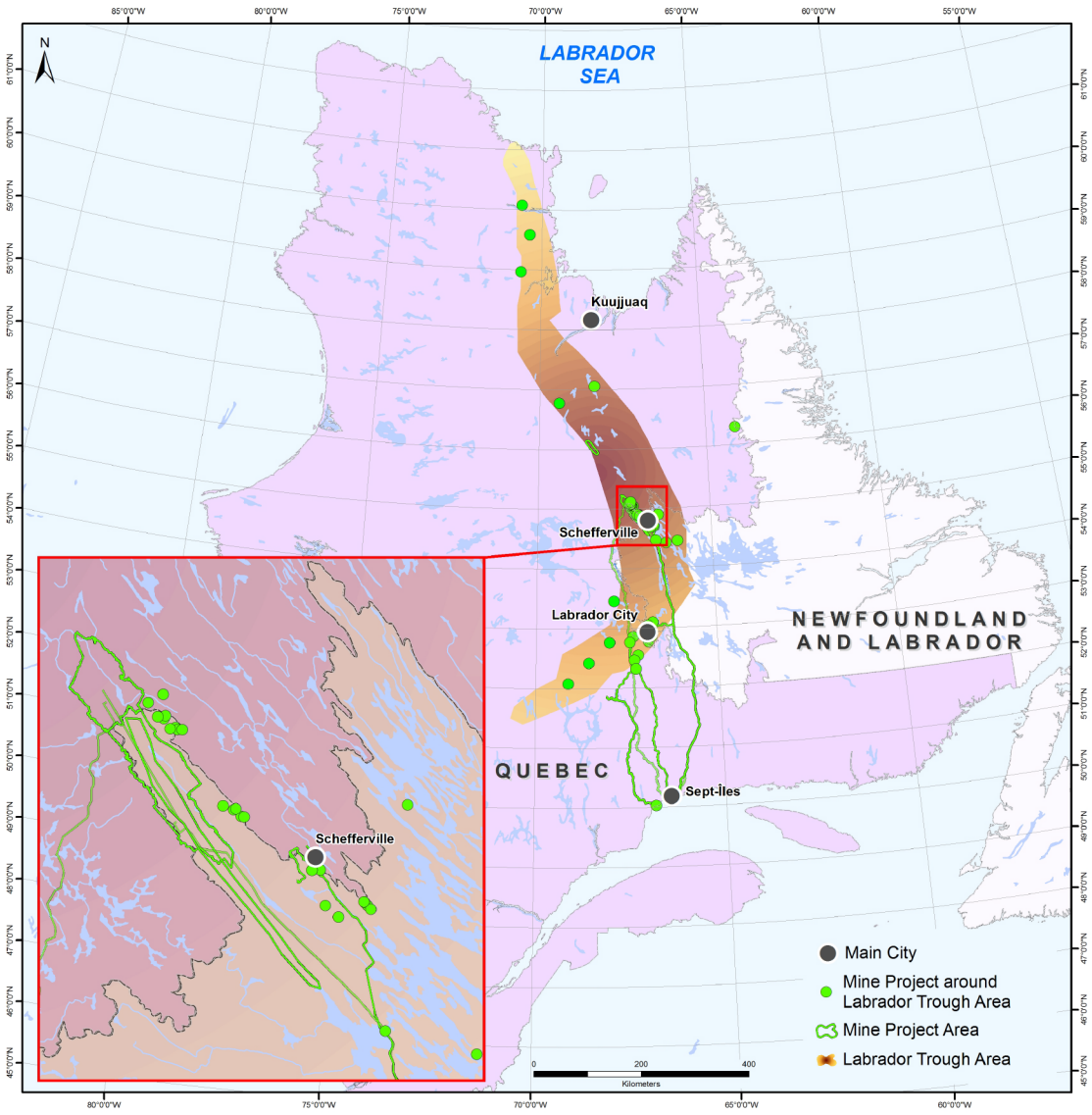
Baseline data is subject to seasonal time restrictions, time constrictions in establishing local knowledge and trends (i.e. climate data), which can take years to compile. Simultaneously, the arrival of large conglomerates can overwhelm locals, who have the best knowledge of local conditions and struggle in the middle of a complex program.

To empower Indigenous groups in their relationship with Promoters, we suggest a training program to collect environmental baseline data in accordance with Environmental Assessment (EA) standards, which can benefit locals and promoters alike. Whereas the former will benefit from: a training program, a better understanding of the EA process, and increased confidence in the process, the latter will benefit by: reducing costs and acquiring a more complete dataset, thus disentangling the relationship between Indigenous groups and promoters.

The setting

The Labrador Trough is a 1,600 km long and 160 km wide region that straddles the Quebec and Labrador border and extends from approximately 51°N to 58°N (see Figure 1). It was characterized in the 19th century by Father Babel, a Jesuit missionary-explorer who travelled in the region in the 1860s, and A.P. Low of the Geological Survey of Canada, who recognized the region's potential for large deposits in the 1890s. At that time, interest in mining was limited due to the remoteness of the site (Clark, 2011; GSNL, 2012). It would take three decades for development to commence in the area, once iron-rich direct-shipping ore was discovered.

In 1954, the town of Schefferville was established by the Iron Ore Company of Canada (IOCC) to support mining activities in the area. At this time, Innu from Maliotenam and Naskapi from Fort Chimo (1956) resettled to Schefferville to assist with exploration work and the railway construction. At its peak in the late 1960s, Schefferville counted some 5,000 residents. By 1972, housing units had been built, and most of the Naskapi and Innu moved to this new site, known today as the Matimekosh Reserve.



Local mining activities ceased in 1982 due to economic difficulties and increased competition. At this time, most of the 4,000 or so non-aboriginal occupants left, leaving mostly aboriginal people who had settled there in the preceding 30 years. As a result, in 1986, the town ceased to exist as many of the existing infrastructures were destroyed by IOCC in order to avoid paying property taxes, and social amenities disappeared. Some houses and public facilities were demolished, while other parts of the infrastructure were added to the Matimekosh Reserve. However, the Indigenous population remained and the town reverted to an incorporated legal entity in 1990.

As a result of these past activities and the fact that, historically, mining companies were released from their projects without the requirement for any site rehabilitation, some areas within the region have become permanently altered.

The biological destruction in the area combined with the economic strains on the nearby communities have resulted in deep-rooted frustration with the mining industry, including the associated regulatory processes. In the context of the EA process, the convolution of several levels of jurisdictions (federal, 2 provincial governments and municipal) straddling the region has led to confusion and frustration, largely over the lack of control over resources and adverse environmental effects on the land.

Since several of these future projects may trigger an environmental impact statement (EIS) via the *Canadian Environmental Assessment Ac*t (CEAA 2012), the region is therefore expected to continue to host proponents who will be required to establish baseline environmental conditions for sites within the Trough.

Environmental Assessment Process

In the context of an EIS, baseline data collection is a crucial first step to understanding pre-project conditions, onto which an eventual effects assessment can be based. In remote regions such as the Labrador Trough, historical data is scarce and largely insufficient to support and EIS. The establishment of baseline conditions can be an arduous process for proponents, especially in remote settings, as it is subject to seasonal time and climate restrictions, which may lead to frequent fly-in fly-out trips, time constrictions (proponent may be pressured to complete this first step rapidly) in establishing local knowledge and trends (i.e. climate data), all of which can take years to compile. Local land users have the most at stake from the implementation of metal mining projects, and the accurate and the thorough completion of the associated EIS documents, and are in the best position to provide information on the current state of the local environment.

To empower indigenous groups in their relationship with promoters and different levels of governments, we suggest that a training program to collect environmental baseline data in accordance with EIS standards, which can benefit locals and promoters alike, be implemented. Whereas the former will benefit from: a training program and a better understanding of the EIS process via active participation, the latter will benefit by: reduced costs and acquiring a more complete dataset, thus disentangling the relationship between indigenous groups and promoters. Further, as is often proposed by authorities, frequent and early communication with local stakeholders is key to developing a good relationship: such a training program would ensure this type of partnership.

For metal mining projects in Canada, there are eight components which are regularly assessed under the EIS process, and therefore require that baseline conditions be established. They are grouped below by sampling effort. Underlying all of the scientific methods that are proposed below is the potential for information on local land use, which is a valued component in itself,

and who's analysis must consider information from the eight biophysical components described below.

Atmospheric environment: aambient air quality, noise, light and climate.

Indigenous groups can provide the information required to fulfill baseline requirements for these components by: 1) proposing sensitive locations (camps, religious and sacred sites) for sampling and 2) recording data points throughout the year to present a complete description of the atmospheric environment. Further, oral histories of changes to these components can provide long-term data which can be used in an EIS document.

Geology, geochemistry, topography, surface and groundwater

The description of these components usually requires the participation of a specialist to carry out data analysis (ex: geographic information systems) and modelling work to fully describe their baseline conditions. None the less, local land users can provide information on water sources used by the community and locations of interest (ex: areas of groundwater resurgence, specific areas used by the community – mountain, river) which should be targeted by the proponent.

Terrestrial environments

The establishment of the baseline conditions of terrestrial environments usually requires that a significant amount of mapping and field surveying be completed to produce, for example an Ecological Land Classification map. The proponent may choose to base its baseline description on literature, in which case indigenous groups could still participate via ground truthing and field validation exercises. Training could be required to apply protocols for such analyses as wetland assessments and soil classification descriptions. Consultations with berry pickers/harvesters may also provide an added-value to the usual flora surveys.

Fauna: fish and fish habitat, avifauna, wildlife

Incidental terrestrial wildlife sightings by local land users and consultation with hunters and fishermen are easily tabulated and these data would provide an indication of population characteristics, locations and habitat preferences, which may provide an added-value to the usual fauna surveys required for the evaluation of baseline conditions. Training may be required to complete more thorough surveys, if needed (e.g. if species is known to be at-risk), and for avifauna.

Aquatic fauna is usually assessed via field work. Sampling can include common methods such as angling. Training would be required on how to effectively describe fish habitats (morphometric, hydrometric and limnological) as well as how to collect biological data from live samples.

Human Health: drinking water sources and consumption of country foods

For this component, pre-project conditions should be described as country food consumption habits followed by an evaluation of the level (if any) of contamination in those foods. This latter step is particularly important for an area like the Labrador Trough, where past projects may have had adverse environmental effects on the environment. For the Proponent, the human health component is made difficult because land users are not always available to complete survey (or may be experiencing survey fatigue, especially in an area that is expected to host numerous projects). Furthermore, the country foods to be targeted need to be present at the time that a sampler is available on site (some country foods migrate, or are only available at certain times of the year).

We suggest that a survey be prepared by the proponent, in assistance with local land users, and that a local person is ideal for carrying both, survey and sampling, as a survey implemented by locals can be more representative of the local population and that all country foods can be sampled, in time, for contaminant evaluation. Training would be required on how to handle samples for analysis, which could then be easily shipped to for laboratory analysis.

General suggestions and development of a firm

We suggest that a local representative be in constant contact with the proponent to develop the baseline conditions for a metal mining project. Although for several field surveys-types, training would be relatively straightforward, for other additional tools, such as mapping using geographic information systems, the knowledge can be transferred in time to indigenous groups. Eventually, it is expected that this contact person could become an established business venture which remains in the community. This 'firm' could eventually offer monitoring and follow-up services and assist in the rehabilitation process of the mining activities. Depending on the experience of the selected local resource, a trained specialist can accompany the resource on site.

We also suggest that, in the context of such a large-scale region as the Labrador Trough, indigenous groups acquire the instrumentation that is necessary for baseline data collection (in situ monitoring stations for air, noise and light, water quality sampling instruments, for example). In time, the acquisition of this equipment (which may be funded), would allow local groups to gain independence from a single company and offer services to a broader clientele.

The intimate knowledge of the baseline data that goes into a complex document such as an EIS would allow indigenous groups to more effectively navigate through the EIS process in general. We suggest that the Labrador Trough, by virtue of its size and potential for numerous large-scale projects, is an excellent opportunity to develop a training program that will be used repeatedly.

References

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