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**Extraction and Empowerment:
The Application of Traditional Knowledge
Within the Development of the NWT BHP
Ekati Diamond Mine
Daniel Vanclieaf**

In the midst of a widespread resource boom, the Canadian Arctic plays host to a crucial balancing act between aboriginal subsistence and the pressures of modern economic development. The recent resource attention in the Northwest Territories (NWT) has jeopardized the traditional practices of aboriginal communities, forcing government agencies and private corporations to implement new and innovative institutions that allow the corporations and the communities to coexist. The inclusion of traditional knowledge in the development process has been fundamental in accomplishing these goals and ensures the needs of aboriginal peoples within the context of the broader Canadian economy. Traditional knowledge has allowed the preservation of aboriginal subsistence, but has also yielded pertinent information to private corporations to minimize environmental impacts and reduce production costs, exemplified in the BHP Billiton Ekati Diamond Mine. This article will define traditional knowledge in the context of northern development and highlight the established policy and institutional framework of its use in the NWT using the case study of the NWT BHP Ekati Diamond Mine. Furthermore, this article will identify current challenges and barriers to implementing traditional knowledge and formulate a possible solution that tackles these issues.

I. What is Traditional Knowledge?

Traditional knowledge can be defined as the “knowledge, innovations and practices of indigenous and/or local communities developed from experience gained over the centuries and adapted to local culture and environment” (Kwaitowski 435). This knowledge, sometimes known as Traditional Ecological Knowledge (TEK), is qualitative in nature and is built through years of experience identifying patterns and processes within the local environment and wildlife. These observations are documented in contrast to modern scientific observations taking a more holistic, abstract approach (Berkes 1251). These differences can lead to significant conflict, but have also allowed traditional knowledge to provide new insights into the development process. Traditional knowledge is able to capture what scientific analysis cannot, adding to the depth of ecological information and encouraging an appreciation of

the relationship between aboriginals and the environment (Huntington 1273). This relationship between external knowledge collection and the greater institutional context is highlighted by Berkes, who identifies the application of TEK into a number of different fields, as seen in Figure 1 (1257).

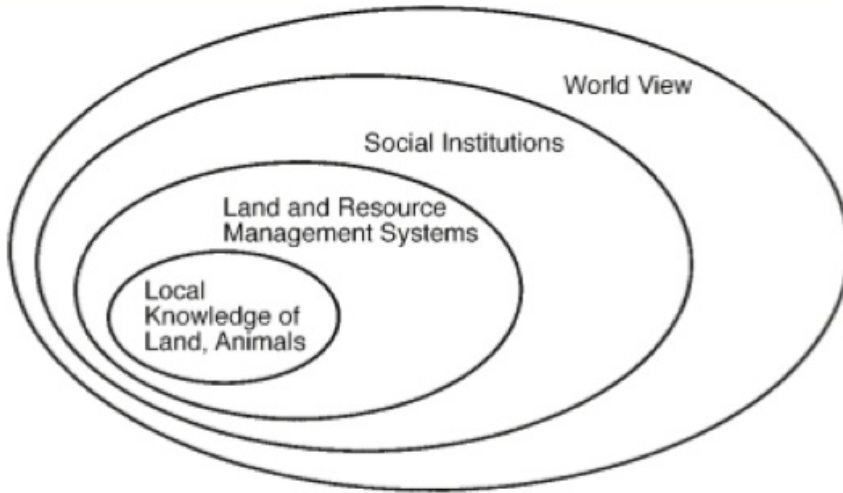


Fig. 1. Level of analysis in traditional knowledge and management systems (Berkes 1257).

In its application, TEK can help predict and prevent adverse environmental effects, and has been incorporated into development processes in order to reduce the overall impact on both wildlife and the environment (Ellis 67).

II. Traditional Knowledge in Policy

The incorporation of traditional knowledge into northern development practices is unique to the NWT and represents a new, innovative process. Government policy that mandates aboriginal participation and institutions that are developed to foster traditional knowledge serve to empower aboriginal communities, and enable them to have some control over their own future (Ellis 69). Linking traditional knowledge and development relies on a two-tiered system, broken down into the policy framework and the supporting initiatives, or top-down and bottom-up approaches. The policy framework is the official acceptance of traditional knowledge, as applied through government policy and institutions (Ellis 67-69). The second tier is primarily initiative driven and focused on developing and maintaining traditional knowledge and ensuring it has an effect on policies and development (Ellis 69). The applicability of these bottom-up initiatives varies with each development and will be

explored in the context of the Ekati Diamond Mine.

In 1993, the territorial government established the Traditional Knowledge Policy, acknowledging “aboriginal traditional knowledge is a valid and essential source of information about the natural environment and its resources, the use of natural resources, and the relationship of the people to the land” (Usher 184). According to this guiding principle, the main avenue for the incorporation of aboriginal traditional knowledge within the NWT is through Environmental Assessment (EA). EA emerged in the NWT as a result of comprehensive land claims – which established a series of local and regional management boards responsible for issues of wildlife –community development, and land use planning, ultimately ensuring traditional aboriginal lifestyles (Ellis 68).

Within this process, efforts to institutionalize requirements for traditional knowledge stem from the Mackenzie Valley Resource Management Act, 1998 (MVRMA). The MVRMA establishes a series of public boards to manage the use of land and water within the Mackenzie Valley region, as well as establishes mechanisms to monitor the cumulative impacts of development (MVRMA, 2007). The Act defines the Mackenzie Valley as the entire Northwest Territories, excluding national parks and encompassing the aboriginal peoples of the Gwich’in, Sahtu, Tlicho, Dene First Nations, and Metis located in the North and South Slave regions (MVRMA 2007).

The Act created two formal institutions, the Mackenzie Valley Land and Water Boards (MVLWB) and the Mackenzie Valley Environmental Impact Review Board (MVEIRB). The MVLWB, operating at a regional scale, grant permits for the use of water and land by development and acts as a pre-screening mechanism for environmental assessment (Ellis 68). These boards review proposed developments and refer certain projects to the MVEIRB for a comprehensive assessment. The Impact Review Board is the authoritative body responsible for environmental assessment, replacing the Canadian Environmental Assessment Agency in the region (Ellis 68). These boards cooperate to ensure the needs of aboriginal communities and to form a unique link between land use permitting and environmental assessment (MVRMA, 2007).

Under this framework, each project is subject to a preliminary screening conducted by the MVLWB, which identifies the level of public concern and environmental impacts. If necessary, projects are referred to an EA or an impact review, in which a more comprehensive study is conducted by the MVEIRB. Within this framework, aboriginal groups have the ability to make recommendations in the pre-screening process, based on the need to incorporate aboriginal traditional knowledge (Ellis 68). TEK is also mandated within EA and impact reviews, through public hearings and requirements for aboriginal consultation. These hearings provide an avenue for

groups to express concerns and work with developers to identify issues associated with traditional land use, such as the movement of wildlife (Ellis 68). Aboriginal peoples represent half of the panel members of the MVLWB and the MVEIRB, serving as advocates for aboriginal groups and ensuring mandated commitments to traditional knowledge.

III. BHP Ekati Diamond Mine

Working in cooperation with this framework, the developments of the BHP Ekati Diamond mine represent the unique nature of development within the NWT. In 1994, BHP Diamonds Inc. submitted a project proposal for the development of the region's first diamond mine. Completed in 1998, the requirements laid out in the EA process served as the benchmark for future development in the NWT, adapting a series of bottom-up institutions encouraging the use of traditional knowledge. The BHP project served as the catalyst for the aforementioned policy framework, establishing many of the institutions and practices that became mandated under the MVRMA.

The site of the Ekati mine lies within a complex network of aboriginal land uses and areas of traditional hunting, mainly that of the Tlicho and Dene First Nations. The site's location is also in conflict with a caribou migration route that is essential for the survival of these aboriginal communities and a watershed from which several communities draw drinking water (Fitzpatrick 98).

Currently producing three percent of the global diamond output, the Ekati mine is of critical importance to the economy of the NWT, but also has a significant impact on the environment (Infomine, 2013). To mitigate these effects, the project was recommended to partake in a public panel review within the EA process. The panel consisted of four members with expertise in aboriginal peoples (Fitzpatrick 100). Under this process, traditional knowledge was made mandatory in the collection of baseline information, impact prediction and monitoring, thus ensuring a commitment to aboriginal traditional land use and socioeconomic well being (Kwiatowski 434).

In the early stages of the assessment process, ten scoping hearings were conducted in affected aboriginal communities, establishing a series of guidelines required in the EA report (Kwiatowski 435). Most of these guidelines revolved around aboriginal communities, but also included the consideration of health, cultural patterns, infrastructure, resource use, employment, education, and training (Kwiatowski 435).

IV. Application of Traditional Knowledge in the BHP Process

i. Prior to Development

To fulfil these commitments, a series of bottom-up initiatives were created, working in combination with the established policy framework, to introduce aboriginal TEK into the mine development process. One of these initiatives was the Interim Resource Management Assistance Program (IRMA), which allowed aboriginal peoples to participate in the EA process, providing them with financial aid to ensure the consideration of TEK (MVRMA, 2007). Funding was also provided by BHP, totalling \$255,000 for participation within the EA process (Fitzpartick 100). This type of support is fundamental in that it subsidizes the cost for those who wish to participate for lost income.

This financial backing was accompanied by numerous studies and monitoring programs developed within the assessment process, including the Traditional Knowledge Study on Community Health and the West Kitikmeot Slave Society (WKSS). The first of these initiatives created an independent community based monitoring program that was conducted by the Lands and Wildlife Committee and was comprised of members of the region's youth, elder committees, and the band council. The program established a series of indicators representing the most pressing concerns of aboriginal peoples within the Ekati EA process. These indicators assisted in allowing BHP to understand the true scope and origins of aboriginal concerns (Fitzpatrick, 2007). This first initiative has continued into present day development negotiations, recording and collecting previous studies and ensuring their use within the BHP Ekati Diamond Mine operations.

In response to the guidelines set out in the assessment process, BHP assisted in the development of the West Kitikmeot Slave Society, which directed a research program focused on collecting baseline information for the EA Report. The study was primarily socioeconomically based, like the Traditional Knowledge Study on Community Health, collecting indicators on "traditional and scientific knowledge, development of cross-cultural research linkages, and the implementation of community research training opportunities" (Fitzpatrick 99). Prior to the development of the Ekati mine, the WKSS conducted three major studies: The Community-Based Monitoring Project, Traditional Knowledge Study on Community Health and the Community-Based Monitoring Cycle Three (Mining Watch, 1999). Furthermore, the society has the ability to choose which projects it funds, granting them a significant amount of power in setting the research agenda (Fitzpatrick 100). Through direct monitoring and evaluation of aboriginal needs, these initiatives directly incorporate traditional knowledge into the development process.

ii. Post development

In cooperation with the pre-development initiatives, BHP created Impact Benefit Agreements (IBA) in consultation with affected aboriginal communities upon completion of the project. These agreements outline specific commitments ensuring aboriginal communities receive a benefit from development. This is largely accomplished through employment targets and economic development, but also establishes commitments to mitigate the adverse socioeconomic effects of development (Mining Facts, 2012). In forming these commitments, traditional knowledge is often applied, developing baseline information regarding aboriginal lifestyles and establishing sustainable levels of environmental and wildlife disturbance (Fitzpatrick 102). Throughout the Ekati process, seven of these agreements were adapted with separate aboriginal communities, more than any other diamond mine project in the territory (IBA Research Network, 2013). Agreements were established between BHP and the Lutsel K'e Dene, Yellowknives Dene, Tlichno, Akaitcho, Kugluktuk, Kitikmeot Inuit and North Slave Métis communities (see fig. 2).

Ekati Diamond Mine	Northwest Territories	Producing	IBA	1996	Lutsel K'e Dene First Nation	BHP Billiton
Ekati Diamond Mine	Northwest Territories	Producing	IBA	1996	Yellowknives Dene First Nation	BHP Billiton
Ekati Diamond Mine	Northwest Territories	Producing	IBA	1996	Tlicho First Nation (Dogrib Treaty 11 Council)	BHP Billiton
Ekati Diamond Mine	Northwest Territories	Producing	IBA	1996	Akaitcho Treaty 8	BHP Billiton
Ekati Diamond Mine	Northwest Territories	Producing	IBA	1998	Hamlet of Kugluktuk	BHP Billiton
Ekati Diamond Mine	Northwest Territories	Producing	IBA	1996	Kitikmeot Inuit Association	BHP Billiton
Ekati Diamond Mine	Northwest Territories	Producing	IBA	1998	North Slave Metis Alliance	BHP Billiton

Fig. 2. IBA List for the Ekati Diamond Mine (IBA Research Network, 2013).

In many cases these IBA contain what Fitzpatrick called “superadded responsibilities”, which require the company to maintain specific commitments to aboriginal peoples (102). These responsibilities are usually outlined in environmental and socioeconomic agreements. Of particular importance, the environmental agreement outlines provisions for an environmental monitoring board, composed of members from First Nations groups and all levels of government. These monitoring programs ensure the application of traditional knowledge past initial project development (Fitzpatrick 102).

Finally, upon completion of the EA, BHP, in cooperation with the government of NWT, established the Community Harvesters Assistance Program. This program, applied across the Mackenzie Valley, grants subsidies geared at supporting traditional aboriginal land use and subsistence activities, lowering the costs associated with its practice. As explained by Ellis, “such subsidies help ensure that traditional knowledge is continually being updated through people’s experiences on the land” (Ellis 69). This allows traditional knowledge to make a significant impact on future developments in the region, working in cooperation with the monitoring programs identified above to ensure the growth of traditional knowledge within aboriginal communities.

V. Challenges

Although the BHP Ekati mine has incorporated a significant amount of aboriginal traditional knowledge in the development process, the full extent of TEK has yet to be realized. Huntington explains that this lack of acceptance is due to issues of inertia and inflexibility (1237). Issues of inertia represent the resistance faced by traditional knowledge due to its foreign nature, which significantly differs from conventional methods of data collection. Challenges are also presented by the changes required in applying traditional knowledge, and the inflexibility of established institutions. In many cases, traditional knowledge faces a significant amount of doubt, largely due to the contrast existing in relation to scientific knowledge, which questions the reliability and the effectiveness of knowledge obtained by these non-scientific sources (Huntington 1273).

The overarching policy framework identified above is monumental in mandating aboriginal consultation, but is vague regarding its implementation (MVRMA, 2007). In many circumstances, organizations and companies are able to carry out these mandates on a case-by-case basis, which are often primarily business-oriented. These interpretations place the onus on aboriginal peoples to discuss traditional knowledge within development. This is explained by Ellis, who argues “many agencies perceive the participation of aboriginal people in environmental governance process as constituting consideration of traditional knowledge” (70). Vague interpretations

undermine the goals of the act, passing participation as an application of TEK (Ellis 70).

Aboriginal traditional knowledge is also threatened by the ideals of “Euro-Canadian Institutions” (Ellis 75). The information resulting through traditional observations conflicts with scientific knowledge, and is seen as challenging conventional power structures by giving a voice to objectives opposite the institutional status quo (Ellis 74). For this reason, the practice has gained little ground. Modern research techniques conflict with the methods employed throughout the traditional knowledge process, which are focused on social science and oral traditions. This conflict is exacerbated due to the long process needed in documenting TEK, which in many cases is limited by the temporal and financial abilities of research collection. For this reason, thorough studies of traditional knowledge are not always justifiable in terms of development, and therefore reduce the ability of aboriginal peoples to apply TEK in the development process (Huntington 1273). In many cases, this has resulted in reduced application, aptly summarized by Huntington, who argues, “insistence on a TEK component of every ecological research and management activity will only succeed in reducing TEK to a token” (Huntington 1273). This argument highlights the point that stricter enforcement of traditional knowledge is not necessarily the best solution.

There are also a number of practical challenges that limit the ability of aboriginal communities to convey important issues. The aforementioned processes requires a significant amount of scientific and technical understanding of a number of fields, an understanding that is extremely difficult to achieve within northern aboriginal communities. This difficulty is due in part to the lack of available resources and barriers between the Euro-Canadian and aboriginal educational models (Ellis 74). In many cases, this requires aboriginal communities to hire third party representatives, thus reducing the effectiveness of their own observations, as seen in the Ekati Diamond project. The technical and scientific nature of the assessment process represents the inflexibility of modern institutions, restricting the ability of aboriginals to participate effectively within it (Ellis 75). There is also a significant language barrier, both in understanding aboriginal oral traditions and specific modern terms. Traditional knowledge is often difficult to interpret because it is often recorded in highly metaphorical and analogical language, leading developers to glaze over certain issues due to a lack of understanding (Ellis 72-75).

VI. Solutions

In addressing these challenges, solutions must, in part, originate from top-down authorities, ensuring the application of traditional knowledge in development through formal laws and regulations. The existing policy framework is a good starting point, but it needs to be improved by applying strict mandates regarding the implementation of traditional knowledge requirements. These changes must be made primarily within the MVRMA, where there is no direct reference to the implementation or consultation of traditional knowledge exist, and no formal definition of aboriginal traditional knowledge (MVRMA, 1998). Many of the issues regarding the misuse of traditional knowledge are due to a lack of understanding of TEK, amongst both policymakers and developers (Usher 184). Clearing up the language within the act can be critical in applying consistency to what is considered traditional knowledge, forcing companies to discuss traditional knowledge, where applicable.

Accompanying this policy change, a number of bottom-up approaches must be taken as well. As explained above, the territorial government, in cooperation with companies such as BHP, have developed a number of initiatives that foster the growth of traditional knowledge, but other fields, such as education programs, are significantly underdeveloped. As identified by Ellis and Huntington, aboriginal peoples face a noteworthy language and educational barrier when entering the development process. Bottom-up initiatives need to be applied, focusing on the development of education programs and ensuring aboriginal peoples have the ability to affectively participate in decision-making processes. Policy change can only go so far and must be accompanied by an increased capacity among aboriginals to participate, thus helping to overcome barriers that dull the potential of TEK in development (Ellis 74).

VII. Conclusion

The past 15 years have yielded significant growth in the policy framework regarding traditional knowledge within the NWT. The BHP Ekati Diamond Mine environmental assessment process has had a significant impact in shaping this growth, establishing landmark institutions and initiatives to foster traditional knowledge at the local level. Despite these developments, there are significant challenges regarding its implementation, resulting in the misuse and neglect of certain aboriginal issues. The proposed solutions outlined in this article seek to address these concerns from both a top-down and bottom-up approach, defining the use of traditional knowledge and encouraging the ability of aboriginals to participate in the development process. In doing so, these solutions assist in overcoming the issues of inflexibility and inertia during a time of rapid northern development. Aboriginal traditional knowledge is

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essential in the development process because it encourages consideration about environmental effects and aboriginal land use, and provides a wealth of unique ecological knowledge.

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