


The University of British Columbia



**“Incorporating
Indigenous and
Local Stakeholder
Knowledge into
Resource
Decision-Making
in British
Columbia”**

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Table of Contents

Acknowledgments	1
Executive Summary	2
Problem Statement	3
Objectives	4
Methods	5
Background.....	6
ORIGINS OF ENVIRONMENTAL ASSESSMENT	6
ENVIRONMENTAL ASSESSMENT IN BRITISH COLUMBIA	6
CRITICISMS OF THE ENVIRONMENTAL ASSESSMENT FRAMEWORK	10
SOCIAL-ECONOMIC AND ENVIRONMENTAL ASSESSMENT IN BRITISH COLUMBIA	11
TRADITIONAL KNOWLEDGE: DEFINITION AND ROLE.....	14
TRADITIONAL KNOWLEDGE AND ENVIRONMENTAL ASSESSMENT IN BC	15
THE CHALLENGES	16
LOCAL STUDY: The Interior to Lower Mainland Transmission Line project.....	18
INFORMAL INTERVIEWS.....	21
Discussion	23
Solution.....	23
Conclusion.....	27
Glossary	28
References	29



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Executive Summary

Global concerns on the failure of modern natural resource management practices to solve environmental complex issues has led to the emergence of the incorporation of alternative ways of knowing and the co-production of knowledge as a viable solution [Berkes, Colding, and Folke, 2000; Robson *et al*, 2009]. In recent years, however, multiple reports have uncovered several constraints in the integration of Traditional Knowledge into the environmental decision-making arena. The report compiles qualitative research methodologies, such as literature review (including current consultation process and policies), observation and informal interviews conducted to develop and to acquire a better understanding of the local natural resource and environmental context and challenges associated to the incorporation of Traditional Knowledge into Environmental Assessment in British Columbia, Canada. In the final section, transdisciplinary approach is presented as tool to address some of the challenges of integration of Traditional Knowledge and Stakeholder¹ Knowledge into resource decision-making.

Keywords: Environmental assessment, Traditional Knowledge, Indigenous people, Transdisciplinary, British Columbia

¹ The term 'stakeholder' refers to either an individual, group or organization who is involved in the different stages of a project and also during the decision-making process. Government, and regulatory agencies, industry and their representatives are examples of the use of the term stakeholders in this report.

Problem Statement

Global concerns on the failure of modern natural resource management practices to solve complex environmental issues has led to the emergence of the incorporation of alternative ways of knowing and the co-production of knowledge as a viable solution [Berkes, Colding, and Folke, 2000; Robson *et al*, 2009]. Traditional knowledge (TK) held by indigenous people (Indigenous knowledge) and local communities (local knowledge) is a rich source of information on the ecosystem components and dynamics of resource development and management that is aligned with local values and beliefs [Johnson 1992; Berkes, 2000].

There is a considerable literature that highlights the contribution of TK to understand complex ecosystem functions and services [Turner, 2000; Uprety *et al*, 2012], to design adaptation strategies to cope with environmental uncertainties [Berkes, 2009], and to promote social inclusion and community resilience [Turner, 2000; Reyes-Garcia *et al*, 2018]. Furthermore, TK has the potential to build trust-relationships between the industry, government, and indigenous people providing a step forward towards an ecological sustainable future; a future that integrates the three pillars of sustainable development comprised of economic, social, environmental sustainability. Trust-relationships may happen when there is respect for the knowledge shared and its integrity is respected, and when is incorporated in a reliable and transparent context. As a result, current environmental legislation is evolving towards the inclusion of traditional values and knowledge into environmental impact assessment of major projects related to environmental and resource management.

In recent years, however, multiple reports have uncovered several constraints in the integration of TK into the environmental decision-making arena. The main barriers come in the form of lack of clear policies and appropriate funding [Johnson, 1992; Usher, 2000; Uprety *et al*, 2012], [Reyes-Garcia *et al*, 2018], cultural differences [Christensen, 2007], power relationships [Zurba, 2009] and the inability to consider alternative ways of knowing [Johnson. M, 1992].

The core of this report focuses on the challenges of incorporating TK² into Environmental Assessment in British Columbia, a Canadian province rich in natural resources, with a diversity of Indigenous communities, and a history of colonialism and Western culture development [Christensen, 2007; Armstrong and Brown, 2019].

Objectives

- To understand the environmental and natural resource decision-making context in British Columbia.

- Review of the local EA processes
- Identification of EA limitations

- To explore some of the challenges and limitations of the EA process in complex Major Projects that involve several stakeholders, government agencies and Indigenous peoples. The local case study selected was: Interior-to-Lower Mainland Transmission Line (ILM).

- Analysis of project planning processes using the above BC's guidelines and literature
- Identification of any component/stage/consultation period missing relevant to an EA context
- Identification of any concern were expressed by the consulted bodies on any component/stage/consultation period missing relevant to the EA
- Identification of any measure was taken into consideration (and by who) to address the concerns raised by the consulted bodies related to the EA
- Identification of how Traditional Knowledge was integrated into the assessments

- To gain a better understanding of the current perceptions on whether Traditional knowledge is incorporated or not into the local EA process. There were performed two Informal interviews to Councillor David Walkem from Cook's Ferry First Nation and Dr. Paul Mitchell-Banks from Central Coast Consulting.

² For the purpose of this report, the term Traditional Knowledge refers to the knowledge held by Indigenous people, specifically First Nations. The term "First Nation" describe Indigenous People of Canada who are ethnically neither Métis nor Inuit. Additionally, local knowledge refers to the knowledge that people developed thought time in a given community and it continues developing.

Methods

A review of the academic and grey literature was conducted to identify the emergent challenges associated with TK and local resource management. First, the environmental assessment process and its legislation was reviewed. Sources considered were scientific papers and books on Traditional Knowledge, Traditional Ecological Knowledge, co-management of natural resources, different ways of knowing, knowledge production, the origins of environmental assessments and colonialism in Canada, and also several provincial guidelines about environmental assessment process. Following, the case study Interior-to-Lower Mainland Transmission Line (ILM) was selected for its analysis. ILM involved the construction of a new high voltage power line that run through several private, federal and Indigenous people lands. The ILM project provides an example of the challenges of Indigenous and local people experienced when participating and engaging during the environmental assessment process of complex major projects in BC. Further, it was performed two informal interviews to knowledgeable and experienced professionals on the EA process and, overall, current Traditional knowledge consideration in the process. In the final section, potential solutions and recommendation relevant to the findings are presented.



Background

ORIGINS OF ENVIRONMENTAL ASSESSMENT

Environmental Assessment (EA) has its origins from the National Environmental Policy Act 1970 (NEPA) in the USA [Morgan, 2012]. The Act provided an environmental policy framework to assist Federal agencies on the consideration and decision-making on the environmental impacts of project proposals on people, communities and their natural environment. At that time, the main purpose of environmental impact assessment was to support agencies' accountability and public transparency [Morgan, 2012].

In a few decades, EA emerged as a recognized tool that became institutionalized globally. By the beginning of the 2010's, the vast majority of the member nations of the United Nations presented some form of national legislation or international legal agreement for the use of EA. Furthermore, EA was considered a core instrument for several international protocols and conventions such as the United Nations Framework Convention on Climate Change and the Convention on Transboundary Environmental Impact Assessment [Morgan, 2012]. Currently, the EA procedures are considered as a reference tool for natural resource management supported by national and international environmental laws.

ENVIRONMENTAL ASSESSMENT IN BRITISH COLUMBIA

In Canada, the EA process was also adopted at Federal and Provincial levels at the beginning of the 1970's. Later, EA was reinforced by the establishment of the *Canadian Environmental Assessment Act (1992)* [CEAA, 1992]. It defines the EA as a “planning and decision-making tool with the purpose of minimizing or avoiding adverse environmental effects before they occur; and incorporating environmental factors into decision making”. The CEAA is overseen by the Canadian Environmental Assessment Agency (CEA Agency), a regulatory body for the conduction of environmental assessment at the Federal level.



In recent years, the CEAA has incorporated several amendments created cooperatively with BC provincial authorities. In chronological sequence the following amendments were introduced:

- 2003: promotion of cooperation and coordination between Federal and Provincial governments
- 2004: the Government of Canada and BC signed the Agreement for Environmental Assessment Cooperation where the BC Environmental Assessment Office (EAO) and the CEA Agency agreed to jointly administer the EA process and align key aspects:
 - Conducting joint public comment periods
 - Coordinating consultation with Indigenous Peoples
 - Establishing common working groups
- 2010 (Bill C): recognition of the CEA Agency as the Responsible Authority to provide recommendation to the Minister of Environment on the approval of a project. Bill C responds to the *Jobs and Economic Growth Act*.
- 2012: the *Canadian Environmental Assessment Act (1992)* was replaced by the *Canadian Environmental Assessment Act (2012)*.

In this report the term Indigenous peoples includes First Nations and people who comes from a long-settlement history and have specific connections to lands which lifestyle and traditions have been adversely affected by the settlement of others. In Canadian legislation is common the use of the term 'Aboriginal people' which refers to the first inhabitants of Canada, and includes First Nations, Inuit, and Métis peoples. For the purpose of this report it is employed the term Indigenous people when referring to Aboriginal people and First Nations.

In British Columbia, the legal framework for EA is regulated by the *Environmental Assessment Act* (SCB 2002). Any major project has to be revised and assessed by the EAO which presents an assessment report to the Minister of Environment for a final decision. An Environmental Assessment Certificate (EAC) is released when a project is approved. The overall purpose of the assessment is to identify and estimate any potential environmental, health, economic, social or heritage effects of the proposed project.

The BC EAO and the CEA Agency's EA present an almost identical process:

1. Determine if an EA is required
2. Establish a Working Group that will be involved with the EA review process
3. Prepare and plan for the application for an EA Certificate (Provincial) / Environmental Impact Statement (Federal)
4. Review and analyze the EA Certificate / Environmental Impact Statement
5. Prepare the EA (Provincial) / Comprehensive Study (Federal) reports
6. Submit a referral to the appropriate federal and provincial ministers for decision.

In many cases, major projects may undergo several levels of assessment; federal and provincial environmental agencies plus another regulatory agencies. As an example, the decision to approve or reject a provincial EA for a forest management project is made by the Ministry of Forest, Lands, Natural Resource Operations and Rural Development and the Minister of Environment.

The BC environmental assessment process follows three main stages [Environmental Assessment Office. USER GUIDE. An Overview of Environmental Assessment in British Columbia – 2018] (Fig 1):

1 – Pre-Application Stage (no timeline for completion of this stage)

- A submission of a Project description to the EAO by the proponent
- Requirement for an EA. The EAO assigned the project to a Working Group. A Working Group is formed by all levels of government and representatives of indigenous groups to review and collect technical advice related to the Project. If it is determined that the Project requires an EA, the EAO will issue an Application Information Requirements to the Proponent.
- Preparation and submission of the Application Information Requirements (AIR) to the EAO for further evaluation. The AIR provides detailed information of the proposed project which enables the proponent to apply for an Environmental Assessment Certificate (under the section 16(2) of *BC Environmental Assessment Act* (SCB 2002)) [BC's EAO's Application Information Requirements Template - 2015].

Proponents have access to an AIR template provided by the AEO to complete their application, but it is not mandatory. The AIR is divided by five sections which includes:

Part A – Detailed description of the proposed project.

Part B – Detailed Assessment of environmental, economic, social, heritage and health effects including methodology used by proponent for assessment of potential impacts of the project, selection of value components³, mitigation measures and identification of Cumulative Environmental Effects (CEE).

Part C – Aboriginal Consultation: Discussion of potential Project effects on Aboriginal Interests (aboriginal rights and treaty rights) and matters of concern not relate to an Aboriginal Interest.

1. Consultation activities (past, current and planned).
2. Summary of key issues and concerns from Aboriginal groups relevant to the EA.
3. Description of how the proponent collected and incorporated Traditional Ecological Knowledge and Traditional Land Use Studies into the EA.

Part D – Public Consultation

Part E – Management Plans and Follow-Up Programs

2 – Application Review Stage

- Consultation period (30 days): First Nations and Public concerns over proposed project to be considered in the review stage.
- Review period and preparation of assessment report (180 days). EAO'S working group identifies any potential environmental, health, economic, social or heritage effects supported by input from experts, scientists, indigenous and local people.
- Submission to Provincial Ministers (45 days). It may include further consultation with representatives of First Nations at a federal level.

³ The EAO's Guideline for the selection of valued components and assessment of potential effects for Environmental assessment in BC defines Valued Components as those "components of the natural and human environment that are considered by the proponent, public, Aboriginal groups, scientists and other technical specialists, and government agencies involved in the assessment process to have scientific, ecological, economic, social, cultural, archaeological, historical, or other importance" [AEO'S Guidelines VCs].

3 – Post- Certification: Approved or Rejected

- If EA certificate is granted by the Minister of Environment, the EAO follows a compliance and enforcement program to verify compliance on the certificate and legal binding conditions. It may include consultation with representative of First Nations.

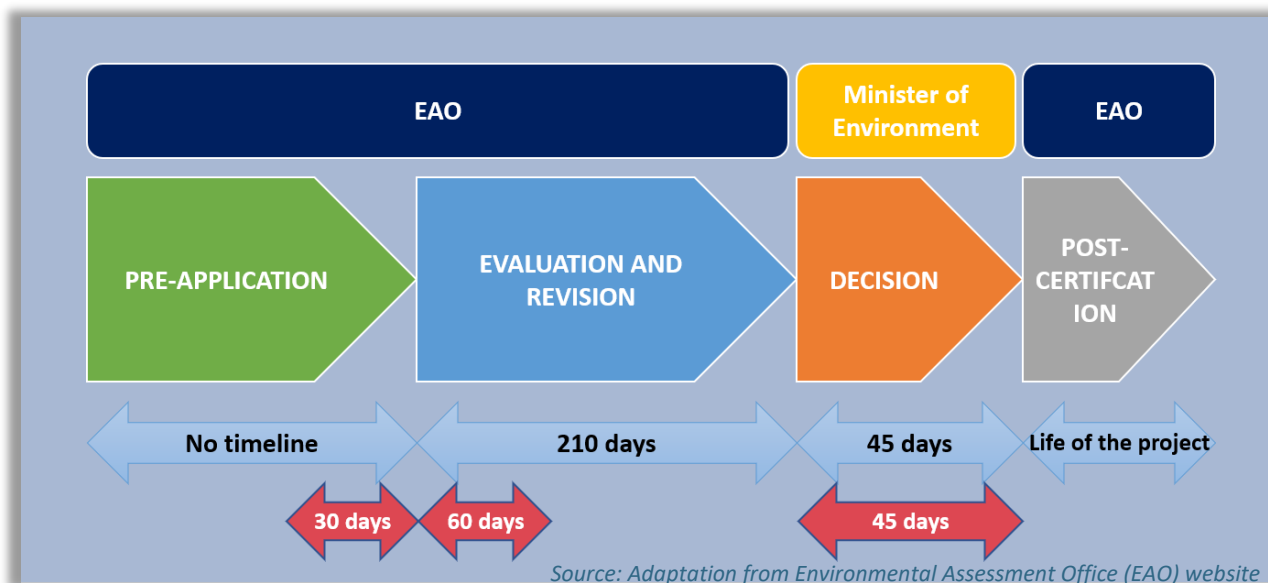


Figure 1: Stages of the Environmental Assessment process in British Columbia

CRITICISMS OF THE ENVIRONMENTAL ASSESSMENT FRAMEWORK

Although decades have passed from the adoption of EA, its theoretical framework remains almost the same. The procedures of the EA follow a rationalist and reductionist model guiding professionals from the collection, analysis and synthesis of relevant information for decision-making. The EA model is characterized by the production and processing of technical information in an objective manner. In this way, decision-makers have better opportunities to evaluate and choose the best option from a range of unbiased science-based alternatives solution.

Over the years, strong criticism has emerged on the nature of institutionalized EA. It has been reported that the highly technical and static framework of the EA process constrains



opportunities for participation by local stakeholders (which can be dynamic in nature) and contribution to decision-making [Morgan. R, 2012]. The EA model is another example of the well-documented bridge between science and practice; a result of the disconnection between the EA model with the socio-economical and cultural context of the area or problem of concern. In order to improve the overall effectiveness of the EA system, collaborative and inclusive public participation has gained strong attention in recent years. However, time and budget constrain, late consideration of Traditional Knowledge in the EA process, power relationships and political agendas, insufficient public participation and an emphasis on EA compliance over effectiveness [Morgan. R, 2012] still compromise the effectiveness of the EA model.

SOCIAL-ECONOMIC AND ENVIRONMENTAL ASSESSMENT IN BRITISH COLUMBIA

In the middle of the 2000's, a provincial social-economic and environmental assessment (SEEA) emerged as an extension of the EA to inform to policy decision-makers on the social and economic impacts of a proposed project. The BC SEEA is a guideline for the analysis of projects associated with land planning and resource management. The BC Ministry of Agriculture is the regulatory body in charge of the management of Crown lands and resources which represented 94% of the province in 2007.

The SEEA guidelines provide information to planners, stakeholders and decision makers on background information and inventory of lands and resources, social-economic parameters, assessment of social, economic and environmental implications and alternate management scenarios for a designated area. It is based on a non-static, non-definite and transparent process which focuses on the understanding of the planning process by all the parties involved; stakeholder, decision-makers, indigenous and local people. The guideline consists of five sections where alternative future scenarios are compared to an assessed baseline. For the purpose of this document only the social implications and environmental assessment sections are expanded.

Following are the main components of the SEEA Guidelines:

1. Economic development

2. Provincial Government finances

3. Social implications: potential social parameters: population impacts; number of jobs, income levels and distribution of opportunities; recreation and environmental impacts with community implications; local government impacts.

- **Specific aboriginal implications: if aboriginal concerns are different from the rest of the population, the assessment includes a section alone for those concerns**
- **Steps**
 - **Discussion with affected aboriginal communities**
 - **Identification of use of resource**
 - **Analysis and evaluation of the impacts on aboriginal communities**
 - **Assessment of the significance of the impacts**

4. Net economic value

5. Environmental Assessment: Environmental Risk Assessment (ERA) for evaluation of environmental implications involving selection of environmental indicators, trends, benchmarks and low and high thresholds. This section includes the assessment of linkages between land, resources and environmental values, ecological risks, CEE and mitigation strategies and anticipatory adaptation measures to climate change.

Neither federal nor provincial legislation support or reinforce the usage of SEEA as the *Environmental Assessment Act* (SCB 2002) with the conventional EA. However, the Resource Analysis Guide for Sustainable Resource Management Planning provides a set of principles and procedures for resource analysis framework and detailed techniques for specific resource sectors. Another important consideration of the SEEA is that the timeline for the completion of the assessment will depend on complexity of the case, the collection of information (primary or secondary) and technical data requirements.

The following graph summarizes the framework, scope and central components of both EA and SEEA.

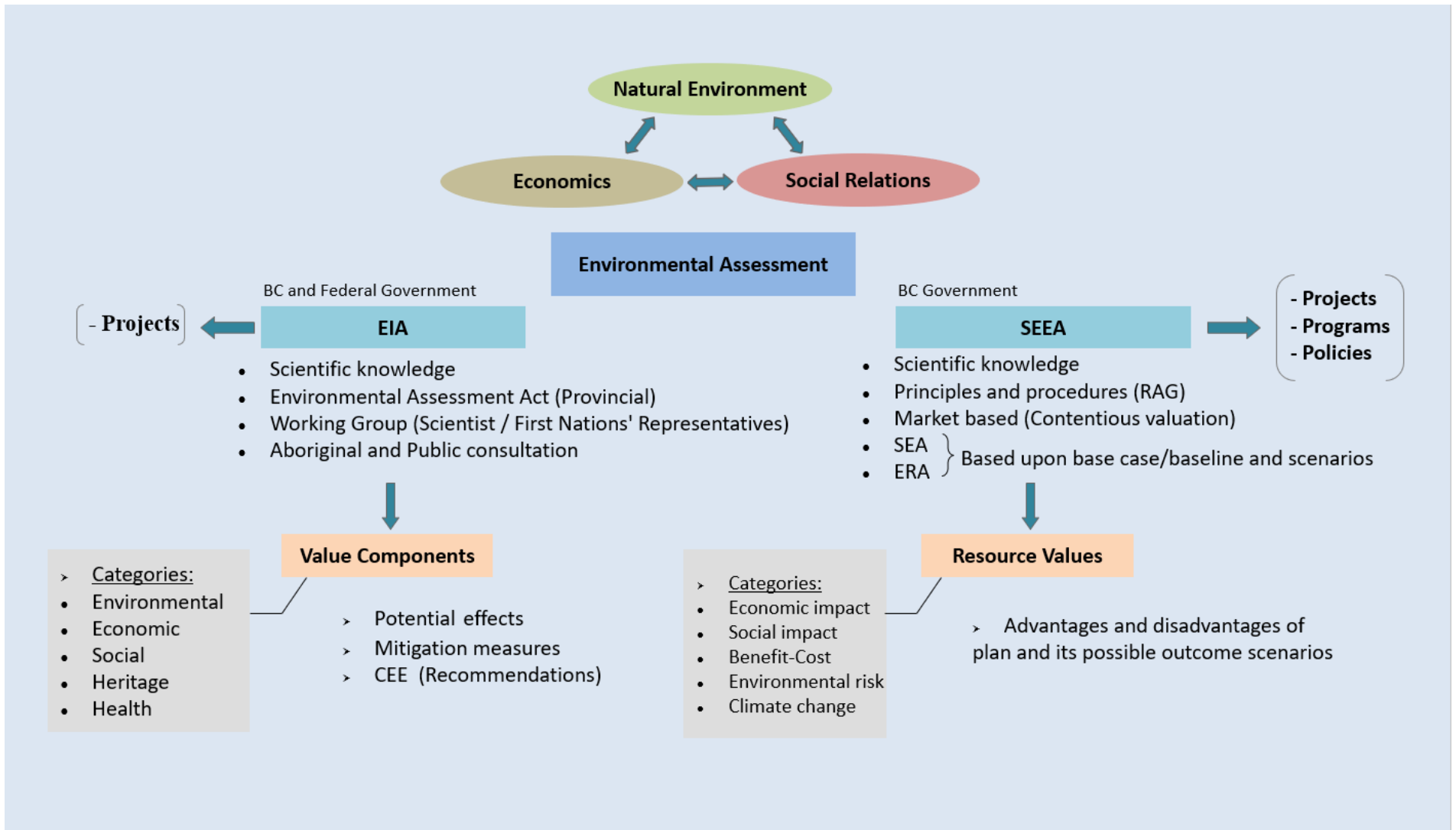


Figure 2: Framework, scope and central components of both Environmental Assessment (EA) and Social-Economic and Environmental Assessment (SEEA).

TRADITIONAL KNOWLEDGE: DEFINITION AND ROLE

Traditional Knowledge, specifically Indigenous ecological knowledge, is the result of complex knowledge systems that comes from the cultural transmission of a long history of success and failure of interactions with the natural environment [Berkes, 2000]. It is consistent with value and culture of Indigenous peoples. Moreover, it is dynamic and adaptive to changing environmental conditions. The intergenerational transmission of knowledge between indigenous people involves sharing methodologies to built knowledge instead of, as it was commonly believed, static information [Johnson, 1992; Turner, 2000; Berkes, 2009]. Berkes (2009) proposes to consider TK as an adaptive process instead of just content. Moreover, TK provides a holistic picture of the environment by considering a large number of qualitative variables [Berkes 2009]. This complex knowledge system is typically transmitted between generations in an oral fashion, but art and dance are considered other ways of sharing knowledge (Fig. 3).

In recent decades, indigenous knowledge has emerged as an important source of valuable information within a natural resource and environmental management (NREM) context providing details about site reference, traditional management practices and land use, species selection [Turner, 2000; Upreti *et al*, 2012], monitoring and assessment and community partnership [Berkes, 2000; Reyes Garcia *et al*, 2018]. Moreover, it has been reported how

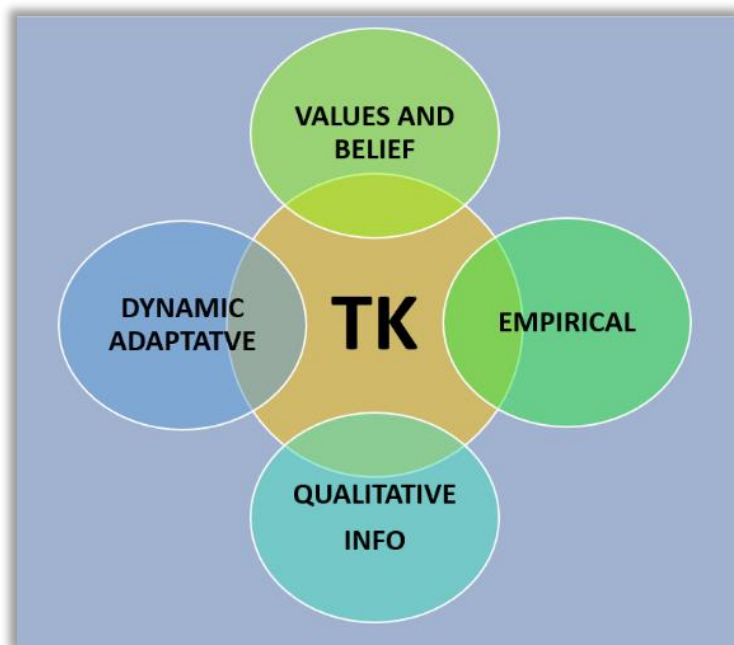


Figure 3: Traditional Knowledge and its main characteristics

Indigenous Peoples modified the landscape to increase plant production and maintain keystone species habitats (e.g. fire management for Bison habitat in the Banff National Park) [White, 2011];

therefore, if TK is not included into natural resource and environmental management, the historical used of land is being ignore.

Researchers emphasized the following TK contributions to the NREM arena:

- Understandings of ecosystems dynamics and complexity of interconnections [Berkes, 2000].
- Building resilience and adaptation to climate change [Berkes, 2009].
- Restoration of ecosystem functions and services with emphasis in biodiversity [Uprety *et al*, 2012; Reyes-Garcia *et al*, 2018].
- Recovery of values and traditions [Johnson, 1992; Turner, 2000].
- Contribution to decision-making process [Berkes, 2009; Robson *et al*, 2009, Zurba, 2009].

Ecological restoration and natural resource management can benefit from the involvement of Indigenous people and their TK, especially in regions where there is a current and evolving recognition of the value of indigenous and traditional people [Uprety *et al*, 2012].

TRADITIONAL KNOWLEDGE AND ENVIRONMENTAL ASSESSMENT IN BC

Since 2016, Canada has fully endorsed and committed to support the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). The Declaration was adopted by the United Nations in 2007 as an international instrument for preservation and protection of indigenous rights, freedom, culture and knowledge. Such endorsement was seen as a step forward towards a reconciliation process between the Government and Indigenous people in Canada.

Canada has a long history of colonialism and the imposition of the Western culture has led to the disruption of indigenous nations and their way of living [Turner, 2000]. As a result, there are challenges associated to building long and trusting-relationships among stakeholders and indigenous people involving the recognition of legitimacy of TK and Indigenous rights on land and resources [Christensen, 2006; Armstrong, 2019].

As mentioned previously, TK is an important component of the values and culture of Indigenous people. The Canadian endorsement to the UNDRIP brought recognition of the importance of indigenous people and their ways of knowing as land managers and their role in conservation and protection of natural areas [David Suzuki foundation, 2018].

In British Columbia, legislation obliges the Government to consult and accommodate First Nations on land and resource projects that could impact their interests (Aboriginal rights and Title and Treaties). In the current BC EA process, the consultation process consists of direct engagement with Indigenous people and First Nations, provision and discussion of information on the proposed project, discussion of Indigenous and First Nations interests, consideration of alternatives to avoid or mitigate negative effects and overall documentation of engagement [EAO's Guideline on First Nation consultation, 2013]. One of the methods used to engage and gather information on potential impacts of a proposed project on Indigenous interest is a Traditional Use Study (TUS) [EAO's Guideline on First Nation consultation, 2013]; a report that combines TK and Traditional Land Use. It provides information on cultural land uses, land management practices and location of spiritual sites. As a result, TK can contribute to the design of new alternatives, the identification of new opportunities and impacts, and provides grounds for mitigation measures of the proposed project.

THE CHALLENGES

The literature reviewed reveals several challenges involving the incorporation of TK into the EA. Some of the challenges are related to the scientific-technical nature of the EA, which are:

- Documented by a western scientific view
- Follows a reductionist/rationalist methodology
- EA is static, highly technical with narrow scope and ambiguous language

Other challenges are related to social and economical components:

- Cultural barriers lead to misunderstandings among proponent, decision-makers and indigenous/local people
- Language and education differences
- Spiritual base of TK
- Lack of funding from industry and Government

As an example, although TUS contains valuable information about past and current land use and resource management of Indigenous people and First Nations neither the proponent nor EAO are required to fund such type of studies during EA process in British Columbia. Since TK is transmitted orally, the written documentation of relevant information may be a way in which both ways of knowing connect.

To further explore the challenges of incorporation of TK into environmental assessment a British Columbia EA case study was examined, the Interior-to-Lower Mainland Transmission Line. Additionally, there were performed informal interviews to Councillor David Walkem from Cook's Ferry First Nation and Dr. Paul Mitchell-Banks from Central Coast Consulting.

LOCAL STUDY: The Interior to Lower Mainland Transmission Line project

The Interior to Lower Mainland Transmission line (ILM) consists of a new 246 km - 500 kV alternating current transmission line from the Nicola substation near Merritt to the Meridian substation in Coquitlam (Fig. 4).

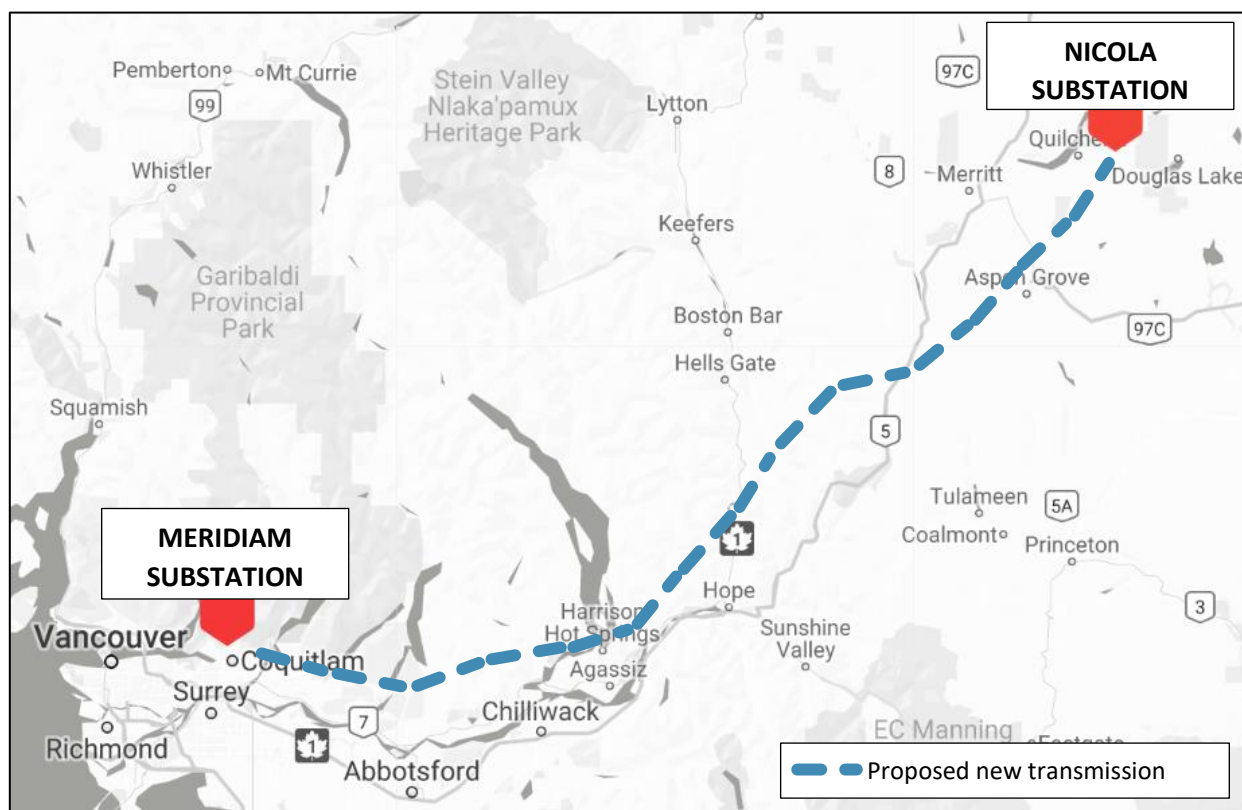


Figure 4: Map of ILM Transmission line route

The purpose of the project was to deliver additional transmission capacity from the Interior of BC to the Lower Mainland and Vancouver Island, route which runs along major rights-of-ways⁴, and through a number of traditional territories. At that time the project was operated by British Columbia Transmission Corporation (BCTC) while BC Hydro owned associated constructed facilities. BCTC/BC Hydro projected a full operation of the ILM by 2014. However, the ILM was

⁴ Right of Way (RW) is a legal agreement that allows a public agency to access a private property, the right to use a portion of the property to install and maintain infrastructure needed for the delivery of a specific service or services.

completed a year later than expected due to failure to properly consult with First Nations⁵ and low-quality standard construction materials (sub-standard steel provided by the contractor) (Fig. 5).



Figure 5: Summary of the ILM Project Stages and Timeline

In 2009, the Ministry of Environment granted an EA Certificate to the BCTC for the ILM project. The EA concluded that the ILM Project was unlikely to have significant adverse environmental effects based on the implementation of proposed mitigation measures. However, the BC Court stopped the development of the project before reaching a decision on the claim of several First Nations of being inadequately consulted during the EA process. To continue with the ILM project timeline, BCTC/BC Hydro required a Certificate of Public Convenience and Necessity (CPCN) in addition to the EA Certificate.

⁵ Hwlitsum First Nation, Kwikwetlem First Nation; Upper Nicola Indian Band, Nlaka’Pamux Nation Tribal Council, and Okanagan Nation Alliance; Cold Water, Cook’s Ferry, Ashcroft, and Siska Indian Bands; Spuzzum First Nation, and Sto:lo Tribal Council and SeaBird Island First Nations claimed insufficient consultation.



Transcripts on the Proceedings from the British Columbia Utilities Commission on the Court of Appeal Reconsideration to issue a Certificate of Public Convenience and Necessity for the project to BCTC/BC Hydro revealed that there were different perceptions on what ‘consultation’ was among BC Hydro/BCTC and First Nations during the EA process. For the *Kwkwetlem* Nation “consultation requires an interactive process” where there is an “exchange of information” and requires “to process it mutually”, referring to proponent [BCUC Pg. 205, 2010]. In another section, Sto:Lo Tribal Council exposed that the term ‘capacity’ used by First Nations not only have a monetary connotation but also refers to “staff capacity” and the “ability to review information and respond in a timely fashion”. The Sto:Lo Tribal Council followed acknowledging the importance of the engagement of representatives of a First Nation who held authority and leadership, and, additionally, expressed that the component timing in this whole process is “not a quick one” [BCUC Pg. 58-59, 2010]. Cold Water, Cook's Ferry, Siska and Ashcroft Bands claimed that BCTC/BC Hydro provided them with neither information required to assess alternatives solutions to new transmission power lines nor meaningful opportunity to influence that Options decision (selection of Preferred alternative solution on the supply energy issue).

In 2011, the Reconsideration of the ILM project of the BCTC by the British Columbia Utilities Commission determined that some of the First Nations were inappropriately consulted [BCUC, 2011]. The Decision concluded that there was insufficient capacity of funding⁶ in earlier stages of the project and inadequate consideration of projects’ alternatives and information provision prior to a decision considering negative impacts and First Nation’s interests before the year 2007. Further, the Decision expressed BCTC/BC Hydro inadequacy on addressing First Nations’ revenue sharing concerns [BCUC, 2011].

Observe that for several First Nations, a Traditional Use Study is an essential tool for adequate consultation [BUCU, pg. 80, 2011] before there is a final decision on which alternatives to choose

⁶ Funding is provided to the First Nations that would be most affected by the Project. Funding facilitates the participation of First Nations in the EAO and other regulatory processes associated with the Project such as identification of concerns and issues, preparation and delivery of reports, submissions or comments on the Project [BCUC, 2011].



before the Project proceed. As was mentioned before, for the BC EA framework, a TUS is not mandatory and this was reinforced by the Decision [BCUC, 2011] where “preliminary information on traditional uses” can be supported by other means than TUS such as “ethnographies, reference materials and experience from other projects” [BCUC, pg.85, 2011]. As mentioned before, TK is passed orally from one generation to another, it is dynamic and adapts to the current environmental conditions. A TUS is a report that documents the TK in a written fashion making available a potential integration of indigenous ways of knowing with Western ways of knowing during the designing, implementing and monitoring stages of a major project. Cold Water, Cook's Ferry, Siska and Ashcroft Bands claimed that although they were engaged in the process of compiling a traditional use study to define their interest and identify issues and concerns from the ILM project, the TUS was approved in 2008, and by that time, BCTC/BC Hydro had already determined the Options decision without fully consulting with First Nations.

It is worth noting that BCTC/BC Hydro complied with the EA process and framework during the development of the ILM. However, the review on the available literature shows challenges of incorporate TK into the decision-making of the project. Booth and Skelton's (2010) local research concluded government agencies provided poor guidance to proponents (industry) on how to consult and collaborate with First Nations which affected trust-relationships building, timelines and costs increments of projects.

INFORMAL INTERVIEWS

An informal meeting with Councillor David Walkem from Cook's Ferry First Nation and Consultant Dr. Paul Mitchell-Banks from Central Coast Consulting shared their thoughts on the challenges of incorporation of TK into EA decision-making in BC.

Councillor Walkem expressed there is insufficient funding to carry on TUS and TK studies. Moreover, proponents that were considering Traditional Knowledge often dismiss previous agreements and move forward with the original proposal. For Councillor Walkem the main reasons are the lack of trained people available to carry on those alternatives and discontinuity



of federal and provincial policies on Indigenous people rights on their territories during different Government administration; thus, highlighting the lack of long-term policies and vision. Further, Councillor Walkem mentioned that although the consultation process has improved during the last years, implementation and monitoring stages are absent. TK and TUS seem to be considered into the decision-making process but even if there is an agreement on incorporating TK into a project there is no further control over compliance.

In response to this topic Dr. Paul Mitchell-Banks mentioned that EA is based on credible scientific information, but it might be disconnected from the local social context and the issues related to resources and land management in complex projects. It was also mentioned that EA typically starts with technical work, and TK and socio-economic research takes place late in the process. Dr. Paul Mitchell-Banks also expressed that it happens as a consequence of time and budget constraints, challenges associated with establishing relationships with indigenous communities who feel under threat. Moreover, it may be challenging to get TK from Indigenous people to inform the EA process as well as EA practitioners to fully considerate TK into decision-making on avoidance and mitigation strategies. Finally, it was expressed a fully support of TUS study for an EA despite not being required by the legislation.

Discussion

The literature review and conduction of the informal interviews shows that the current challenges involving the incorporation of traditional knowledge into environmental assessment in British Columbia are a consequence of:

- Absent participation of Indigenous people in the decision-making process of the designing stage of the project. Alternatives scenarios are informed during the consultation meetings. However, the trajectory of the project has already been set, dismissing the opportunity to include major amendments to the design and location of facilities
- Different perceptions among stakeholder and indigenous people on the meaning of consultation process.
- Lack of education or funding for Indigenous people training not only in the collection and sharing of TK for the project but also in understanding in what the project consists and the EA process as a whole.
- Inconsistent long-term policies at federal, provincial and local government.

Solution

The BC legislation provides a framework to assess major projects related to environmental and resource management. It also promotes the involvement of stakeholders and Indigenous people in the decision-making process. However, when the projects involve vast areas with different kinds of governance, social and economical realities, the rigid nature of the legislation may not adequate to all the arisen concerns.

As outlined in this report, BC environmental assessments are very valuable frameworks, but the identified challenges are a consequence of the fact that local people and traditional people are not necessarily integrated. Indigenous and public consultation is characterized by a top-down approach. Government agencies determine the implications and concerns without fully consulting with all the potentially affected stakeholders and indigenous and local people. In this

way the process followed by the EA approval can bring disagreement between the proponent and the affected stakeholders whose concerns may be accepted but not necessarily incorporated or reflected in the final assessment.

Environmental and resource management contexts are complex arenas requiring a flexible approach when it comes to decision-making. A transdisciplinary approach has the potential to help different stakeholders, scientist, decision-makers and indigenous and local people to sort out their differences and collaborate towards decision-making and problem solving [Jahn et al, 2012]; [Sakoa et al, 2018]. The transdisciplinary approach is a potential tool for developing a more general body of knowledge beyond disciplines and the inclusion of non-academic stakeholders (“Mode 2”) knowledge production [Jahn et al, 2012]. It requires the recognition that scientific and traditional knowledge are complementary to each other [Berkes, 2009; Usher, 2000].

Transdisciplinarity means the creation of an integral framework beyond the disciplinary perspectives that would bring in together social, economical and environmental science but also other ways of knowing. Stakeholders and Traditional knowledge would help the proponent (Industry or Government) to identify the problem and aid the collection of information, and further, with the analysis and interpretation of the results during consultation process.

In BC EA context, a transdisciplinary approach can be applied at the initial stages of the proposed project, through the formation of an independent cross-cultural expert panel for the integration of the two knowledge systems; Western science and traditional knowledge. The public and First Nations involvement since the beginning of the process would contribute to the generation of research questions that are outside the boundaries of single disciplines and would lead to the production of an overall knowledge with embraced all the disciplines. The expert panel would promote commitment among the scientists, industry, decision-makers and Indigenous people (e.g elders and younger harvesters). The incorporation of traditional knowledge does not mean to restrain from scientific knowledge, by the contrary, it would lead to the creation of a more balanced power relationships and set grounds for critically thinking systems [Christensen, 2007; Zurba, 2009].

A transdisciplinary approach at the initial stages of a proposed project would lead to:

- Mutual identification of issues and concerns before a proposal draft is designed for a specific issue.
- Mutual agreements on the methods/methodologies employed to address the issue where concepts, procedures and terminology are clear and shared among all the parts involved.
- Formulation of questions for mutual concerns and interpretation, finding the answers through the interaction of both knowledge systems.
- Contribution to the development of a common understanding of the different perceptions and concerns and procedures to follow when addressing an issue allowing transparency in the process.

As a consequence, Traditional Knowledge holders would get recognition as land managers acquiring more rights and responsibilities over local natural resources. Hence, environmental and natural resource scientists and stakeholders would act as facilitators, negotiators and knowledge providers. Stakeholders and Indigenous and local people would both contribute with their knowledge and impact the decision-making process.

It is worth noting that the studies of the practice of transdisciplinarity has recently emerged. One of the main barriers in the application of transdisciplinary approach is communication and collaboration [Zscheischler and Rogga, 2014]. The desired result of applying Transdisciplinarity at the initial consultation stage would provide dynamism to the EA, the ability to address any specific issue and adapt to multiple socio-economical and environmental contexts. As mentioned before, it is for this reason that stakeholders, public (including Indigenous Peoples) and decision-makers should put their efforts in setting practical terms, clear information and ways to document and validate information following methodologies accepted by all the parties involved (including Indigenous Peoples). Moreover, decision-makers should be working on providing a clearer legislation in terms of definitions and procedures. The outcome of this collaborative decision-making process is to reach transparency and a sense of ownership, essential for true

commitment (Fig. 5). As an example, the BC Government is making substantial efforts to bring transparency to the current environmental assessment process through the Environmental Assessment Revitalization plan. The new *BC Environmental Assessment Act* (Bill-51) is aiming to bring in meaningful public and Indigenous participation in all stages of the environmental assessment process supported by developed, engaged and refined regulations. Details on

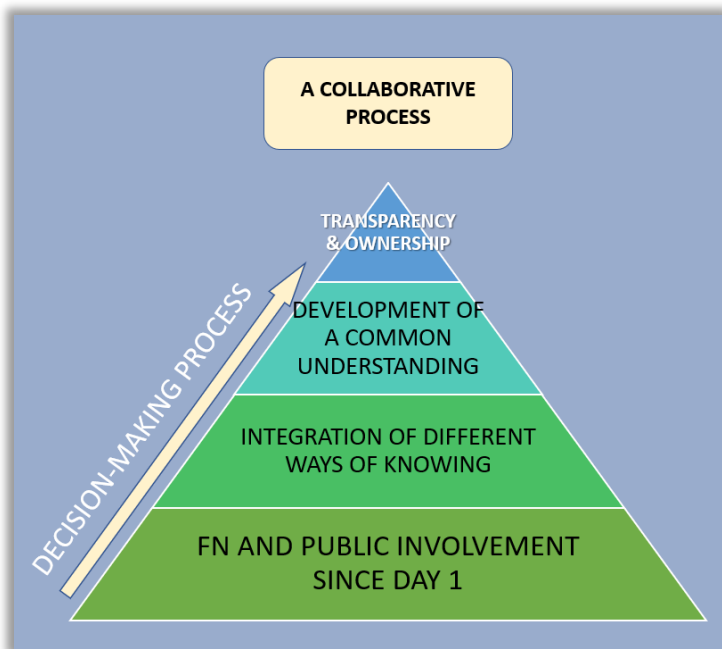


Figure 4: Transdisciplinary approach applied as collaborative process into the Environmental Assessment process in British Columbia

how the Environmental Assessment process will be changed to contribute to the incorporation of traditional and stakeholders on resource decision-making will be at the end of 2019.

Conclusion

Currently in British Columbia, the environmental federal and provincial environmental assessment is based on a top-down approach, where regulatory government agencies assess the scope and potential negative implications of any major project while guiding proponents in the compliance of the legislation. Within this process, the Consultation stage represents a key step for integration of stakeholder knowledge and Indigenous and local knowledge. However, there are challenges associated with the incorporation of Traditional Knowledge into the resource decision-making process. Local challenges were identified in the form of late participation of Indigenous people in the planning stage of major projects, different perceptions of the legislation by proponent (Industry and Government) and Indigenous people, lack of funding and capacity for Indigenous people to undertake long-term participation, inconsistent oversight on the integration of TK and Indigenous Peoples involvement in the implementation and monitoring stages of the projects. As a result, a line of action is proposed that is based on a transdisciplinary approach at the initial stages of a proposed project in a way to transition from a the top-down approach to a bottom-up approach where effected stakeholders and Indigenous and local people have active participation and collaboration allowing the production of a shared body of knowledge where concerns, objectives and methodologies can be mutually identified and embodied in a long-term project. The aim of such line of action is to provide dynamism and versatility to the EA framework to address any specific issue and adapt to any complex environmental and socio-economical context.

Glossary

EA: Environmental Assessment

EAC: Environmental Assessment Certificate

EAO: Environmental Assessment Office

AIR: Application Information Requirements

CEA Agency: Canadian Environmental Assessment Agency

CEAA: *Canadian Environmental Assessment Act (1992)*

CEE: Cumulative Environmental Effects

NEPA: National Environmental Policy Act 1970

SEEA: Social-Economic and Environmental Assessment

UNDRIP: United Nations Declaration on the Rights of Indigenous Peoples

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