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LAND RIGHTS IN A HYDROELECTRIC ERA: IMPACT ASSESSMENT OF THE JAMES BAY DAM PROJECT (CANADA)

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Summary

The James Bay Project is an on-going hydroelectric development undertaken by Hydro-Québec to harness the vast hydroelectricity potential of the James Bay region of the province of Québec in Canada. This project is significant not only because it has one of the largest generating capacities in the world but it is also one of the very few large-scale hydroelectricity projects to emerge out of a developed country in recent years. For this reason alone, a review of the environmental impact assessment process used in this case would be noteworthy. In addition, however, the James Bay area is home to the Cree First Nation. The historical divergence between the Cree and both the Québec and the Canadian governments adds a crucial dimension to the importance of examining this environmental impact assessment process. The presence of the Cree in the region makes this study an excellent indicator of the complex interaction between large-scale energy developments, environmental impacts and human health. Eco-health recognises that the economy, the environment and the needs of the community all have an impact on the health of an ecosystem and consequently, the people living within that ecosystem. The focus is on understanding (i) the interactions between social and ecological systems impacting health, and (ii) the influence of human activities on sustainability. The concept of Eco-health also seeks to identify ecosystem management strategies that contribute to improving the health and living conditions of human populations and the sustainability of the ecosystem in which they live.

We will focus primarily on the environmental impact assessment (EIA) process followed for the recent Eastmain-1A/Diversion of the Rupert River project began in 2002 and is to be completed in 2010.¹ This chapter of the James Bay Project clearly demonstrates the progress accomplished over the past 30 years regarding environmental impact assessments for this multifaceted project. The most significant advance has been in the area of public consultation, especially concerning the people of the Cree Nation. When Robert Bourassa, the Premier of Québec at the time, first announced the Bay James Project in 1971, the Cree were not even consulted.² Thirty years later, as we will see in this report, things have improved considerably. This is not to say, of course, that there is no room for further progress. As we will see, the process is an evolving one, subject to substantial, and often well-founded criticism, especially where human health impacts from the increased presence of environmental

¹ <http://www.hydroquebec.com/rupert/en/>

² http://archives.cbc.ca/society/native_issues/topics/2473/

contaminants are concerned. Nonetheless this EIA process is recognized on a national and international level as one that shows much promise, especially where Indigenous communities are involved.³

1. Introduction/Overview

In 1944, the Québec government passed Bill 17, merging Québec's two largest hydroelectricity corporations.⁴ The outcome of this industry restructuring was a publicly owned commercial enterprise known as Hydro-Québec. Ontario had followed a similar path a few years earlier.⁵ The justification given by both provinces was that the private providers were selling hydroelectric energy to consumers at a rate much higher than necessary. There were also provisions calling for the extension of the hydroelectric grid to the rural population of the Québec province that was, for the most part, not serviced by the private electricity producers.⁶ Over the next several decades Hydro-Québec embarked on several projects aimed at increasing the utility company's hydroelectric capacity. In 1962, the Québec government expanded on the privatization of the hydroelectric industry in that province, by purchasing several other hydroelectric companies rendering Hydro-Québec the largest hydroelectricity provider in Québec.⁷ This privatization of the hydroelectricity industry in Québec also meant that the Québec government was implicitly involved in all further hydroelectric projects undertaken by the publicly held corporation. These projects increased in number and size very quickly as Québec-hydro struggled to modernize its grid and provide energy to an increasingly urban and industrialized population.⁸

Hailed as the "project of the century", the James Bay Project was to ensure the energy needs of the Québec province. It was also seen as an economic engine, a way to raise much needed capital from the sale of excess energy to fund social programs in the province.⁹ The project was announced in 1971 by the Québec government and is the largest hydroelectric project in Canada. It consists of various phases each leading to further development such as the construction of dams, dikes, reservoirs, power stations and creating diversion channels into La Grande River. Between 1979 and 1996 eight power plants were added to the initial structure.¹⁰

Currently, Hydro-Québec is in the process of finalizing a project that saw three additional generating units become operational in 2007 (Eastmain-1A project) and the diversion of the Rupert River to provide additional power to the Robert-Bourassa Reservoir. The completion date for the diversion project is expected to be 2010. This article will examine closely the environmental impact assessment conducted for this phase of the

³ http://hqweb.unep.org/dams/documents/ell.asp?story_id=29

⁴ http://www.hydroquebec.com/learning/histoire/histoire_quebec/index_frame.html?ext_epoque=2

⁵ <http://www.hydroone.com/en/about/history/timeline/>

⁶ Hydroquebec, supra at note 4

⁷ http://www.hydroquebec.com/learning/histoire/histoire_quebec/index_frame.html?ext_epoque=4

⁸ "Urbanization was undoubtedly the most salient phenomenon in Quebec at the start of the 20th century. In 1901, only 36% of the population lived in cities; thirty years later, that proportion had reached 60%." Charpentier, Louise, René Durocher, Christian Laville and Paul-André Linteau. *Nouvelle histoire du Québec et du Canada*, Anjou, Centre éducatif et Culturel, 1990, p. 278

⁹ http://archives.cbc.ca/society/native_issues/topics/94/

¹⁰ http://www.hydroquebec.com/generation/hydroelectric/la_grande/index.html

James Bay Project, as it was the most complete and expansive to date. We will make references where necessary with other environmental assessments done for other phases of the project to demonstrate the progress made, over the years as well as aspects of the environmental assessment process that need to be reconsidered or improved upon such as placing a larger focus on the human health aspects due to environmental pollutants such as mercury.¹¹

This study demonstrates the complex relationship of the various stakeholders in a project of this magnitude and over such an extensive period of time. Priorities and power relationships change over time and among the stakeholders but the environmental and eco-health impacts remain constant. We suggest that it is important to work towards an EIA system that is centred around this constant, and hence the fact that in reality these impacts affect *all* stakeholders irrespective of their priorities, as well as third parties, irrespective of their awareness of the project in question.

2. Methodology

This study was conducted by using reports from the various stakeholders, governmental reports, scientific evaluations and studies and articles published in various academic journals. The study is also influenced to a large degree by the author's personal work with Indigenous communities including the James Bay Cree.

3. Case Details and Analysis

3.1 History of the case

Eeyou Istchee: Land of the Cree

The French, based on an Ojibway word, called the people of the James Bay area "les cristinaux". Eventually this was shortened to Cri or Cree (in English).¹² Despite this, Cree contact with outsiders consisted mostly of staff from the Hudson's Bay Company or representatives from Indian Affairs.¹³ That is until large mineral and electricity exploration was undertaken by the province on Québec in the James Bay region in the mid-1900s. Eeyou Istchee consists of 9 different communities, each with its own Chief and Band Council. The communities are: Chisasibi, Eastmain, Mistissini, Nemaska, Oujé-Bougoumou, Waskaganish, Waswanipi, Wemindji and Whapmagoostui. The total population of these villages is over 16,000 people with about 35% under the age of 20.¹⁴

The Cree population continues to increase at a rapid pace, putting pressure on community leaders to provide sufficient housing and jobs to

¹¹ Health Canada's Submission on the Environmental Impact Statement for the Eastmain-1-A and Rupert Diversion Project, April 2006 at page 19

¹² Pierre Pouchot, *Mémoires sur la dernière guerre de l'Amérique septentrionale*, 2003 Edition, p. 186

¹³ Siy, Alexandra, *The Eeyou People of Eastern James Bay*, New York, Dillon Press, 1993

¹⁴ <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=89-590-X>

meet the demands of the youth. Economic development therefore, is a must for this region. As traditional living is redefined, the James Bay Cree have decided to engage in development projects, but not at any price. The Cree have gone to great lengths to demand that the economic activity that occurs on their territory responds to the needs of sustainable development and maintenance of the Cree language and culture. For example Cree children are taught principally in Cree for the initial years of their formal education, at which point their parents decide if there are to continue in French or in English.¹⁵ English is the dominant second language in the region. Also, the school year is interrupted for Goose and Moose hunts (Goose Break or Moose Break). This gives the opportunity to children to learn in a more traditional way by spending two weeks, often twice a school year, with their families in their traditional hunting grounds (Traplines). If it were not for these breaks the children would have to choose between participating in these cultural activities and staying in school.¹⁶ Despite such efforts to keep young people in school, many do not finish high-school, greatly increasing the need for employment and housing given the high number of youth in the communities.¹⁷

The necessity to preserve Cree cultural and economic interest led to the creation of the Grand Council of the Crees in 1974, in Eastmain. The Council was to defend Cree interests during negotiations on the James Bay Hydroelectric Project. The Grand Chief and Grand Council continue to this day to represent the James Bay Cree Nation as a whole.¹⁸ Its head office is found in Nemaska. Also based in Nemaska is the Cree Regional Authority (CRA), created pursuant the Act respecting the Cree Regional Authority, R.S.Q., c. A-6.1, first adopted in 1978, the CRA, "is the administrative arm of the Cree government. It has responsibilities in respect to environmental protection, the hunting, fishing and trapping regime (Section 22), economic and community development, the Board of Compensation, and other matters as decided by the board of directors."¹⁹ The Grand Council and the CRA were both a result of the need for the Cree to organize and defend their way of life, their land and their future in the face of the enormous hydroelectric project proposed by Québec in 1971. As we will see below, this increased negotiating power lead to the James Bay and Northern Quebec Agreement of 1975. This Agreement paved the way for the environmental impact assessment process currently followed in Québec and Canada.

Hydro-Québec and the government of Québec

As mentioned earlier for Hydro-Québec and the Québec government, the development of the James Bay region was seen as a means of ensuring future energy needs for an increasingly energy-demanding population as

¹⁵ Burnaby, Barbara, "Cree decision making concerning language: A case study", 2001 *Journal of Multilingual and Multicultural Development*, 22(3): 191-209

¹⁶ Jaime Little, Goose Break: The changing climate and hunting in the North, http://www.dominionpaper.ca/articles/1200_May_27, 2007

¹⁷ Submission of the Grand Council of the Crees (Eeyou Istchee) to the Standing Committee on Aboriginal Affairs on Housing and Community Infrastructure, March 27, 2001, <http://www.gcc.ca/archive/article.php?id=113>

¹⁸ <http://www.gcc.ca/gcc/whogcc.php>

¹⁹ Ibid.

well as creating, what were perceived as much needed profits from the sale of excess hydroelectricity production, especially to the United States.

Table 2-9: Sales and purchases outside Québec from 1995 to 2003

Year		1995	1996	1997	1998	1999	2000	2001	2002	2003
Sales (Exports)	TWh	23.9	18.9	15.2	18.5	22.9	22.0	15.5	15.9	9.6
	\$M	637	588	596	810	953	1,287	1,132	1,094	849
	¢/kWh	2.7	3.1	3.9	4.4	4.2	5.8	7.3	6.9	8.8
Purchases (Imports)	TWh	2.1	2.4	2.5	4.6	4.3	4.7	4.9	3.3	5.6
	\$M	30	42	54	179	171	294	286	122	253
	¢/kWh	1.5	1.8	2.1	3.9	3.9	6.2	5.8	3.7	4.5
Net reservoir outflows	TWh	21.9	16.5	12.7	13.9	18.5	17.3	10.6	12.6	4.0
	\$M	607	546	542	631	783	993	847	972	596
	¢/kWh	2.8	3.3	4.3	4.5	4.2	5.7	8.0	7.7	15.1
Transactions on markets outside Québec										
Purchases/ resales	TWh	Insignificant before 1998			0.1	1.3	14.9	25.9	37.2	5.2
Revenues	\$M	Insignificant before 1998			2	62	1,066	1,893	2,310	427

Source: Hydro-Québec Environmental Impact Statement

As collaborative as the relationship between Hydro-Québec and the Québec government was due to their common interests, the same could not be said of Québec and the Cree Nation. Given the relationship between the Québec government and Aboriginal people in the early 1970s, it is not surprising that the Cree were not consulted on the project. In addition to this turbulent relationship, there was the relationship between the Canadian government and Aboriginal people, which was no less tumultuous, and the relationship between the Québec and the Canadian governments, which was tense at best. Interestingly enough all these relationship remain troubled to this day. We must, however, remember that the James Bay Project was announced at the end of a period in Québec's history known as the "quiet revolution".²⁰ It was a time of deep societal and political change in Québec. The extensive social programs conceived during this era needed capital to be sustained and natural resources were the province's most important asset. Resisting the temptation to follow the path of other provinces and turn to nuclear power to meet its energy needs, Québec ventured into the resource-rich Northern Québec with a variety of economic development projects ranging from hydroelectric power to mining to lumber and even tourism. The production of hydroelectricity was without a doubt the focal point of this economic development. This result of this investment in hydroelectricity is evidenced by the fact that in 2008 Hydro-Québec was one of Canada's largest companies and employed about 23 000 people.²¹

Québec Civil Society

In the initial phase of the James Bay Project environmental groups and civil society was scarcely present. This is understandable given that the

²⁰ National Film Board of Canada, The 1960s in Quebec were marked by "the Quiet Revolution," a period of rapid social, political and cultural change,
http://mediasphere.nfb.ca/E/history/content/quiet_revolution.ep1

²¹ http://www.hydroquebec.com/publications/en/enviro_performance/pdf/rdd_2008_en.pdf

modern environmental movement as a whole was still at an infancy stage. Rachel Carson's "Silent Spring" was barely 10 years old and the environmental movement of the 1960s was only just beginning to get organized and able to react effectively to environmentally damaging development projects. In Canada this movement lagged behind the United States and in Québec, given the societal restructuring of the "quiet revolution", it was only beginning to take form. Since so much of Québec economic development was connected to the James Bay Project, few Québécois voiced opposition. Therefore, the Cree had little help in their initial opposition to the James Bay Project.²²

In the international legal arena there was very little to help as well. The Stockholm Declaration, the foundational instrument of modern international environmental law, came to be in 1972, just a few months after the project was announced. The Cree, however, did receive significant help from Civil Society during their opposition to the Great Whale phase of the James Bay Project many years later. Public pressure and reduced energy needs led the State of New York in the United States to cancel a multi-billion dollar contract with Hydro-Québec in 1992. Without this potential return on investment, the project was not very financially feasible.²³ Furthermore, an environmental assessment, tabled in 1994, revealed serious environmental and human health consequences. The project was put on hold indefinitely very soon after the release of the environmental assessment report.²⁴ By this time, international environmental law had entered into a new era with the Rio Conference in 1992, which led to such defining international instruments such as the Rio Declaration, the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity. These developments were preceded by Convention on Environmental Impact Assessment in a Transboundary Context in 1991.

During the Eastmain-1A and diversion of the Rupert River projects civil society became very active. Groups such as Ottertooth and Rupert Reverence did mount a public awareness campaign to stop the diversion of the river. Although the civil society opposition was much more organized and vocal during this phase than any other, much of the Canadian population, including that of Québec, is to this day either unaware of the project or simply indifferent. Those that fall into the indifferent category consist mainly of people following the Not In My Back Yard (NIMBY) creed, which basically involves opposing environmentally damaging developments close to home but remaining unresponsive to those occurring faraway. This can be explained by the fact the North of Canada is foreign to most Canadians. A very small percentage of the Canadian population has ever been to these areas or has even a superficial understanding of the people the live there and the fragile yet crucial natural ecosystems that exist in this region.

²² <http://www.ottertooth.com/Reports/Rupert/News/rupert-surrender.htm>

²³ Mary Williams Walsh, "Loss of Contract Leaves Power Project in Dark: New York cancelled a \$15-billion agreement to buy electricity. If construction is halted, economic effects will ripple throughout Quebec." Los Angeles Times, Apr 18, 1992

²⁴ Quebec shelve major power project: Broadcast Date: Nov. 18, 1994
<http://archives.cbc.ca/clip.asp?page=1&IDClip=553&IDCat=360&IDCatPa=262>

The James Bay and Northern Québec Agreement and the Beginning of EIAs in the Region

At just 6,000²⁵ people in 1971, the James Bay Cree had to organize quickly if they were to provide any sort of opposition to the James Bay Project. They turned to the courts for help and filed for an injunction to halt the project until Cree claims to the area were resolved. In November 1973 Judge Albert Malouf granted the injunction, asserting that Cree and Inuit land rights in the area had not been extinguished.²⁶ The Quebec Court of Appeal overturned the judgment the following week.²⁷ The Supreme Court of Canada agreed to hear the case in December 1973. The Supreme Court's decision to hear the appeal put additional pressure on the Québec and Canadian governments to negotiate a settlement with the Cree and Inuit. Late in 1974 an agreement in principle was reached. The Cree, under the now functioning Grand Council of the Crees, ratified the agreement soon thereafter.²⁸ The Inuit also ratified the agreement in early 1976. The Naskapi First Nation signed a parallel agreement called the Northeastern Québec Agreement, linking them to the institutions established under the James Bay and Northern Québec Agreement.²⁹

The James Bay and Northern Québec Agreement, was the first treaty of this nature since the 1920s. Given its breadth, it had little resemblance to any other treaty between the federal or provincial governments and Aboriginal peoples. The agreement obliged the federal and provincial governments to upgrade public services to national standards and to pay monetary compensation.³⁰ Furthermore roughly 3,500 square kilometres of land, were allocated to Cree for their exclusive use; another 40,000 square kilometres was set aside for the exclusive hunting, fishing, and trapping by the Cree in this area.³¹ Also, the Cree could hunt based on a quota system in all areas not under development.³² The agreement went far in advancing the notion of aboriginal self-government, crucial to the social development of these communities. The political units created under the Agreement were to have control over health, education, and other local matters.³³ The Cree Regional Authority, the Cree Board of Health and Social Services, the Cree School Board, and the Cree Construction Corporation were established to help administer these services to the public³⁴. In the same vein an Income Security Program, administered by the Cree Trappers Association, gave the Cree wildlife management rights and guaranteed income to hunters and their families.³⁵ This was especially critical given the number of traplines affected by the flooding from the Project.

²⁵ www.gcc.ca/newsarticle.php?id=158

²⁶ Cree surrender land in historic agreement, Broadcast Date: Nov. 12, 1975, http://archives.cbc.ca/society/native_issues/clips/484/

²⁷ Ibid.

²⁸ Ibid.

²⁹ Environmental Assessment of Northern Projects, <http://www.mddep.gouv.qc.ca/evaluations/mil-nordique/index-en.htm>

³⁰ JBNQA

³¹ Ibid.

³² Ibid.

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

The James Bay and Northern Québec Agreement requires two consultative committees composed of Aboriginal and government officials, to advise the government on the environmental and social consequences of development projects or other government policies.³⁶ The James Bay Advisory Committee on the Environment has this responsibility for the Cree and the Kativik Environmental Advisory Committee provides this role for the Inuit of Nunavik. The Agreement also put in place an environmental evaluation procedure for any new development projects and requires the participation in this environmental assessment process of both, the Canadian and Québec governments as well as the Cree Regional Authority and the Kativik Regional Government.³⁷ Closely related the condition of the natural environment is that of human health. The Agreement acknowledges the importance of human health and the need to have health issues managed on a local level. To this end, in Cree communities the Cree Board of Health and Social Services of James Bay is responsible. In Nunavik, the Kativik Health and Social Services Council provides these services.³⁸ Human health and environmental quality were seen as indivisible by the Cree even at the early stages of the Agreement negotiations and hence the central role given to health services in the Agreement and in any environmental impact assessment under the Agreement.

3.2. Case Details

Environmental Impact Assessment Legislation Relevant to the James Bay Project

Relevant International Obligations

On February 26, 1991 Canada signed the Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention) and ratified in on May 13, 1998. The convention is a UNECE³⁹ convention signed in Espoo, Finland, in 1991 that entered into force in 1997. The Convention sets out the obligations of the signatories to carry out an environmental impact assessment early in the planning stages of various development activities. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries. Canada accepted this Convention in its entirety with only the following reservation, a statement reflective of the overlapping federal and provincial obligations in the environmental and health spheres in Canada. The reservation states that, "inasmuch as under the Canadian constitutional system legislative jurisdiction in respect of environmental assessment is divided between the provinces and the federal government, the Government of Canada in ratifying this Convention, makes a

³⁶ Ibid.

³⁷ Ibid.

³⁸ Ibid.

³⁹ The United Nations Economic Commission for Europe (UNECE or ECE) was established in 1947 to encourage economic cooperation among its member States. It is one of five regional commissions under the administrative direction of United Nations headquarters. It reports to the UN Economic and Social Council (ECOSOC). As well as countries in Europe, it includes the United States of America, Canada, Turkey, Israel and the Central Asian republics.

reservation in respect of proposed activities (as defined in this Convention) that fall outside of federal legislative jurisdiction exercised in respect of environmental assessment.”⁴⁰

The Espoo Convention is supplemented by the Protocol on Strategic Environmental Assessment (Kiev Protocol) of 2003 but Canada is not a member of this protocol. According to UNECE, “strategic environmental assessment (SEA) is undertaken much earlier in the decision-making process than project environmental impact assessment (EIA), and it is therefore seen as a key tool for sustainable development. The Protocol also provides for extensive public participation in government decision-making in numerous development sectors.”⁴¹

As we will see below, the environmental impact assessment procedure followed in the Eastmain-1A/Diversion of the Rupert River project appears heavily influenced by the principles found in both the Espoo Convention and the Kiev Protocol.

Aside from these very specific international instruments, we also see the influence of several basic principles of international environmental and health law. For examples the duty to ensure the sustainable use of natural resources;⁴² the principle of equity and the eradication of poverty;⁴³ the principle of the precautionary approach to human health, natural resources and ecosystems;⁴⁴ the principle of common but differentiated responsibilities;⁴⁵ the principle of public participation and access to information and justice;⁴⁶ the principle of good governance;⁴⁷ and the

⁴⁰ http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtsg_no=XXVII-4&chapter=27&lang=en

⁴¹ http://unece.org/env/eia/sea_protocol.htm

⁴² Found in *UN Framework Convention on Climate Change* Preamble (sovereignty & responsibility); *UN Convention on Biological Diversity* Preamble (sovereignty & responsibility), Art 3 Principle and Art 10 (sustainable use); in *UN Convention to Combat Desertification* at Art 3(c) Principles (work toward sustainable use of scarce water & land) and in Art 10.4 (national action plans), Art 11 (regional and sub-regional actions), Art 17.1(a) (research and development), Art 19.1(c) & (e) (capacity-building); in the *WTO Agreement* at Preamble; in *FAO Seed Treaty* at Art 1.1 Objective (conservation and sustainable use of PGRFA) then operational in Art 6 (measures for sustainable use of plant genetic resources).

⁴³ Found in *UN Convention on Biological Diversity* at Art 15.7 (access and equitable benefit sharing); in *UN Framework Convention on Climate Change* at Preamble (present and future generations) and at Art 3 Principles (equity); in *UN Convention to Combat Desertification* at Art 16(g) (traditional knowledge sharing), Art 17.1(c) (TK research & development), Art 18.2(b) (tech transfer); and in *FAO Seed Treaty* Preamble (responsibility & benefit-sharing), and at Art 1.1 Objective (ABS) and Arts 10, 11, 12, 13 (multilateral system of ABS for plant genetic resources).

⁴⁴ Found in *UN Convention on Biological Diversity* in Preamble and operational at Art 14.1(b) (likely adverse impacts) and Art 8(g) (LMOs); in *Cartagena Protocol on Biosafety* at Preamble (precaution), at Art 1 (precaution), at Art 7 (AIA), at Art 10.6 (decision-making), at Art 11.8 (FFP), at Art 15 (risk assessment) and at Annex III.4; in *UN Framework Convention on Climate Change* at Art 3 Principles (precaution); *WTO SPS Agreement* at Art 5.7 (provisional measures); and *NAFTA* at Art 905 (use of international standards) and 907.3 (assessment of risk / provisional regs).

⁴⁵ Found in *UN Framework Convention on Climate Change* Preamble (cbd), at Art 3 Principles and Art 4 Commitments (Annex 1 and non-Annex 1); in *Kyoto Protocol* at Art 10 (cbd in inventories & programmes) and Art 12 (CDM); in *UN Convention to Combat Desertification* at Art 3 Principles (cbd), Art 4, Art 5, Art 6 (affected and developed country party obligations) and Art 7 (for Africa); in the *WTO Agreement* at Preamble; and in *FAO Seed Treaty* at Art 7.2(a) (developing country capabilities), at Art 8 (technical assistance), Art 15.1(b)iii (benefits to least developed and centres of diversity), and Art 18.4(d) (financing).

⁴⁶ Found in *UN Convention on Biological Diversity* at Art 13 (public education and awareness) and Art 14.1(a) (participation in impact assessment); *Cartagena Protocol on Biosafety* at Art 23 (public awareness and participation); *UN Convention to Combat Desertification* at Art 3 (a) Principles and Art 10.2(f) (national action plans); *WTO Agreement* at V.2 (consult NGOs); *FAO Seed Treaty* at Art 9.2(c) (farmers rights to participate), and in *Aarhus Convention on Public Participation, Access to Information and Access to Justice (infra)*.

⁴⁷ Found in *UN Convention to Combat Desertification* at Art 3(c) Principles, and Art 10.2(e) (institutional frameworks for national action plans), Art 11 (subregional and regional) and Art 12 (int'l cooperation); in *FAO Seed Treaty* partially at Art 9 (farmers rights); and in *UN Convention Against Corruption* at Preamble, at Art 5.1 (rule of law) and at Art 62.1 (measures for sustainable development). See also *Commission on Human Rights Resolution 2001/72* “The Role of Good Governance in the Promotion of Human Rights.”

principle of integration and interrelationship, in particular in relation to human rights and social, economic and environmental objectives.⁴⁸

Relevant National Statutes

Section 22: James Bay and Northern Québec Agreement

Article 22 of the James Bay and Northern Québec Agreement (JBNQA) sets out the framework for environmental and human health impact assessments to be carried out in the James Bay region (Section 23 provides this for Nunavik). We must keep in mind the four years prior to the signing of the James Bay and Northern Québec Agreement, the Cree were not even consulted on a project that was to permanently alter the natural environment of their homeland and expose them to significant health risks. Below we list some of the most relevant sub-sections relating to environmental impact assessment and Cree participation in said assessment, contained Article 22:

Section 22: Environment and Future Development Below the 55th Parallel

22.1.4 "Development" or "Development Project" shall mean a project consisting of any work, undertaking, structure, operation, industrial process which might affect the environment or people of the Territory, exclusive of the operation and maintenance of such project after construction...

22.2.2 The said regime provides for:

b) An environmental and social impact assessment and review procedure established to minimize the environmental and social impact of development when negative on the Native people and the wildlife resources of the Territory;...

c) A special status and involvement for the Cree people over and above that provided for in procedures involving the general public through consultation or representative mechanisms wherever such is necessary to protect or give effect to the rights and guarantees in favour of the Native people established by and in accordance with the Agreement;

22.3.1 A James Bay Advisory Committee on the Environment (hereinafter referred to as the "Advisory Committee"), a body made up of members appointed by the Cree Regional Authority, Canada and Québec is established to review and oversee the administration and management of the environmental and social protection regime established by and in accordance with this Section.

22.3.4 The members of the Advisory Committee shall each have one (1) vote except as hereinafter provided otherwise:

c) When matters of joint or mixed federal and provincial jurisdiction are being dealt with by the Advisory Committee, the members appointed by Québec and the members appointed by Canada shall each have one (1) vote and the members appointed by the Cree Regional Authority shall each have two (2) votes, and the Chairman of the Hunting, Fishing and Trapping Coordinating Committee shall have a vote.

22.5.1 All developments listed in Schedule 1 shall automatically be subject to the impact assessment and review procedures provided for herein...⁴⁹

As we can see concepts such as the need for an environmental impact assessment, public participation in the environmental impact assessment process, the importance of special status of the people most affected (beyond that of the general public) by the project question, attention to the responsibilities of various levels of governments are all found in Section 22 which predates many national and international legal documents on the topic. Participation of the Cree on the various Assessment committees is clearly defined assuring the involvement of the Cree in the assessment process itself. This is beyond simply insisting that

⁴⁸ Found in the *UN Convention on Biological Diversity* at Art 6 (integrate conservation and use into policies, plans, etc); in the *Cartagena Protocol on Biosafety* at Preamble (mutually supportive) and at Arts 2.4 and 2.5 (other int'l instruments); in *FAO Seed Treaty* at Preamble (synergies) and at Art 5.1 (promote an integrated approach); in GATT at Art XX (exceptions) and in *NAFTA* at Art 103, 104 and 104.1 (relationships with other accords), Art 1114 (enviro standards & investment) and 2101(exceptions).

⁴⁹ *Ibid.*, article 22

the Cree be informed on the progress and the findings of the Assessment but requires the active role of the Cree in the process itself. Also Article 22 stipulates that all developments found in Schedule 1 of the Agreement will be automatically deemed to require an environmental impact assessment. This is a great improvement to the system where a government authority decided whether an environmental impact assessment is necessary for such significant development projects.

Environmental Quality Act Chapter I

The full importance of the stipulations found in the James Bay and Northern Québec Agreement concerning environmental impact assessments conducted for development projects in the James Bay area can be seen when we examine the Québec Environment Quality Act R.S.Q., chapter Q-2. In the first Chapter of the legislation we find articles dealing with environmental protection including:

31.1. No person may undertake any construction, work, activity or operation, or carry out work according to a plan or program, in the cases provided for by regulation of the Government without following the environmental impact assessment and review procedure and obtaining an authorization certificate from the Government.

31.3. After receiving the environmental impact assessment statement, the Minister shall make it public and indicate to the proponent of the project to initiate the stage of public information and consultation provided for by regulation of the Government. Any person, group or a municipality may, within the time prescribed by regulation of the Government, apply to the Minister for the holding of a public hearing in connection with such a project. Unless he considers such application to be frivolous, the Minister shall direct the Bureau to hold a public hearing and report its findings and its analysis thereof to him.

31.4. The Minister may, at any time, request the proponent of the project to furnish any information, to study certain matters more thoroughly or to undertake certain research which he considers necessary to fully evaluate the impact of the proposed project on the environment.⁵⁰

Therefore in the Québec Environment Quality Act we note that even after an environmental impact assessment has been completed by the proponent, the provincial Minister of the Environment can still demand that certain aspects of the project be further studied before rendering a decision on whether the project can proceed. In this case the proponent submitted a supplement to the environmental impact assessment, providing 384 clarifications as requested by the Provincial Administrator of the James Bay and Northern Québec Agreement and the Federal Review Panel.⁵¹ We also note that environmental impact assessments are to be made public soon after the Minister receives them and if a credible demand is made for a public hearing, the Minister is obligated to hold such as hearing.

Environmental Quality Act Chapter II

These stipulations, and many other concerning environmental impact assessments, found in the Environmental Quality Act refer to development

⁵⁰ Environmental Quality Act (Québec) Chapter I, article 31

⁵¹ Supplement to the Environmental Impact Statement Answers to requests for additional information made by the Provincial Administrator of the James Bay and Northern Québec Agreement and the Federal Review Panel, December 2005, http://www.hydroquebec.com/rupt/en/pdf/comp_volume-01.pdf

projects in general. The Act, however, contains a second Chapter appropriately titled: *Provisions Applicable to the James Bay and Northern Québec Region*. The importance of this inclusion of treaty obligations into the law of Québec should not be underestimated. The provisions found within this chapter implement the treaty obligations and hold the Québec government or any other entity engaged in development activity in the James Bay area accountable to Québec law for the obligations undertaken under the James Bay and Northern Québec Agreement, at least where environmental impact assessments are concerned. Some of the significant sections include:

140. ...Furthermore, the functions of the Advisory Committee are to oversee, through free exchange of views and information, the application of Section 22 of the Agreement, and to exercise administrative control over the Evaluating Committee contemplated in section 148...

(a) recommend the adoption of laws, regulations and other measures designed to improve the protection of the environment and of the social milieu; b) consider and formulate recommendations concerning laws, regulations and administrative procedures dealing with the environment, the social milieu and land use; (c) consider and formulate recommendations concerning environmental and social impact assessment and review mechanisms and procedures.⁵²

152. In the exercise of their functions and jurisdictions, the Gouvernement du Québec, the Cree Regional Authority, the Cree villages, the municipalities, the Bands, the Regional Zone Council, the Advisory Committee, the Evaluating Committee and the Review Committee shall give due consideration to the following principles:

(a) the protection of the hunting, fishing and trapping rights of the Native people in the territory described in section 133 as well as their rights in Category I lands, with regard to any activity connected with projects affecting the said territory; (b) the protection of the environment and social milieu, particularly by the measures proposed pursuant to the assessment and review procedure contemplated in sections 153 to 167, in view of reducing as much as possible for the Native people the negative impacts of the activities connected with projects affecting the territory contemplated in section 133; (c) the protection of the Native people, of their societies, communities and economy, with regard to any activity connected with projects affecting the territory contemplated in section 133; (d) the protection of the wildlife, of the physical and biological milieu and of the ecological systems of the territory contemplated in section 133, with regard to any activity connected with projects affecting the said territory; (e) the rights and guarantees of the Native people in Category II lands, established under the Act respecting hunting and fishing rights in the James Bay and New Québec territories (chapter D-13.1); (f) the participation of the Crees in the application of the environmental and social protection regime provided for in this division; (g) any rights and interest of non-Native people; (h) the right of the persons acting lawfully to carry out projects in the territory contemplated in section 133.⁵³

This piece of provincial legislation specifically targets development projects in the James Bay region. It is interesting to note that it calls for the jurisdictional cooperation of all parties involved including equal footing for the various Cree organizations. It also acknowledges the differentiated rights for the Cree based on whether a particular territory is deemed Category I, II or III lands. Category I provide the Cree with the most rights and Category III with the least. Most interesting is the fact that Chapter II of the Environmental Quality Act explicitly insists on the inclusion of social impacts in any environmental impact assessment carried out in this region. As we will see, this includes impact on health and impacts on such matters such as protection of culture and way of life. A concrete example of the active participation of the Cree in the

⁵² EQA, supra at note 40, Chapter II, article 140

⁵³ Ibid., article 152

environmental impact assessment, especially where Category I lands are concerned, would be the fact that the proponent relied on Cree traditional knowledge to enhance the quality of various aspects of the assessment. This is important since the inclusion of Indigenous traditional knowledge in environmental impact assessments can play a significant important in adapting these institutions and processes to Indigenous worldviews. Koutouki conducted a study in Canada’s Arctic to explore the relationship between land claims agreements and climate change. The crucial importance of incorporating traditional knowledge in institutions and processes contemplated in land claims agreement is clear:

Tagalik (Shirley) further suggests that land claims agreements provide the operating structure for local organizations across Nunavut. These organizations, which stem from Inuit Qaujimajatuqangiit (traditional knowledge) principles, are organized to ensure that the land claims agreement can accommodate the future needs of Inuit communities. She says:

If these organizations are doing their jobs well, they will be doing the accommodating. They have the potential to have the most recent research, to have the science working for them; to be informed about what is going on in different areas and to be responding. And so, if our organizations are taking that role seriously, and are using that information to adapt their policies and practices in line with what is happening in their environment—which should be an entirely IQ approach—then [the system] should work.

She reinforces this idea by stating that a key principle of Inuit Qaujimajatuqangiit is the need to constantly adapt in new and emerging ways to present circumstances...⁵⁴

The following is a chart of how the proponent in the Eastmain-1A/Diversion of the Rupert River project incorporated traditional knowledge into the Assessment process.

Table 5-5: Examples of the use of traditional knowledge (1 of 2)

Component or theme	Data and use
Fish	<ul style="list-style-type: none"> • Location on a map with a scale of 1:50,000 of spawning grounds in the Rupert River and the diversion bay section. This information was used to plan the spawning ground inventory and is illustrated on Map 5, in Volume 7. • Indication on data sheets of the species present in various stretches of the Rupert River and the lakes in the diversion bay section. Estimate of their relative abundance (Map 5, Volume 7). Information used to corroborate inventory data. • At the request of Mistissini users, a fishing program was conducted in the diversion bay section in 2004 to compare the fish population composition determined with their fishing method and their knowledge of the environment, and that obtained through scientific fishing conducted in 2002 (Chapter 10).
Waterfowl	Location of places spring staging areas for migrating waterfowl; this data is shown on Map 12, Volume 7.

⁵⁴ Koutouki, K., Lyons, N., “Canadian Inuit Speak to Climate Change: Inuit Perceptions on the Adaptability of Land Claims Agreements to Accommodate Environmental Change” (2009) 27 WILJ 3, 516.

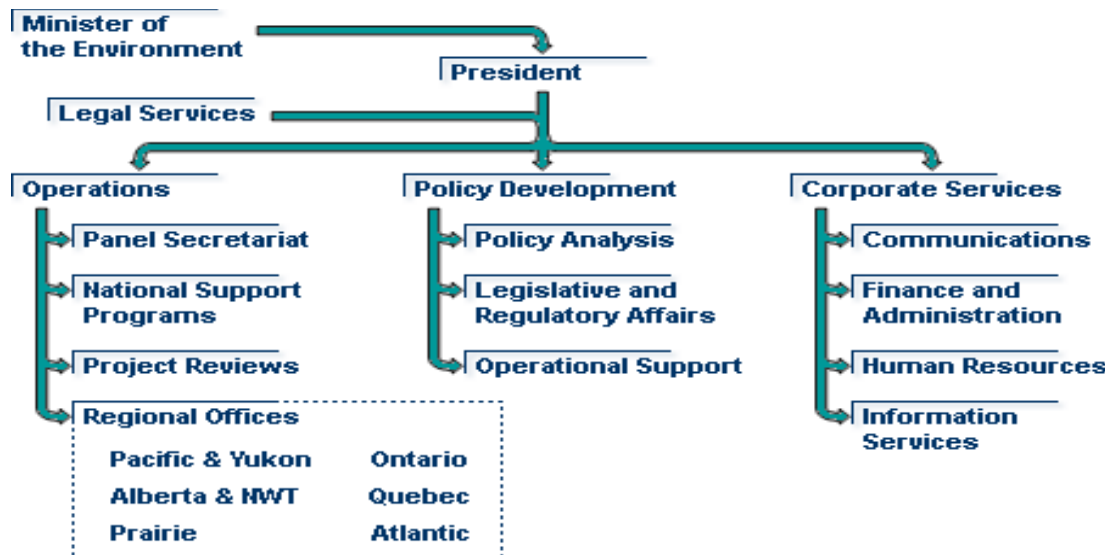
Large animals	<ul style="list-style-type: none"> • Location of bear dens and bear hunting grounds to characterize the habitat frequented by this species (see Method M13 in Volume 6). • In the southern part of the forebay, no moose yards were observed during the surveys and the route for the road crossed a series of hills which, according to available data, did not present any constraints in terms of habitat. However, the user indicated that this area had always been good for moose hunting, so the planned road was moved 1.5 kilometres to the west.
Beaver	Contrary to scientific expectations, users of the Rupert River below the dam site consider that beavers will be endangered when the flow is reduced by the diversion scheduled for December. Lake Boyd users share this opinion, but believe that the problem will be the higher winter water level in the lake. A measure was added to the impact study to trap or relocate the beavers before the diversion.
Diversion bay limits	According to some Mistissini users, the maximum limit of the diversion bays on the maps used during the consultations is inaccurate at two places because, in their experience, the slope of the land there is quite gradual, so the flooding would go farther than expected. Verification on maps of a scale of 1:10,000 showed that the slope is slight, but sufficient to limit flooding. These maps were given to the users.
Navigation	<ul style="list-style-type: none"> • Knowledge of navigation conditions in Rupert Bay was essential for data collection in this part of the study area. • Given the limits of simulation with orthophotographs, user knowledge was extensively applied to determine where in the Rupert River motorboating conditions are currently difficult and where they may deteriorate a bit more after the flow reduction (KP 131 and the stretch from below the dam to KP 281).
Exposed riverbed	<ul style="list-style-type: none"> • The simulations showing exposure of the Rupert River bed in the stretches not influenced by hydraulic structures were corrected at various locations by the users, whose knowledge of the existing water depth in these places was used to define the exposed area more exactly. • In the small bay on the south bank at KP 311, since there is no bathymetric cross-section, the user's opinion was used as the basis for estimating the extent of the changes to the banks and their accessibility from the user's camp.

Source: Eastmain-1-A Powerhouse and Rupert Diversion, Environmental Impact Statement, Volume 1 Chapters 1 to 9.

The Canadian Environmental Assessment Act

The Canadian Environmental Assessment Act pertains to projects connected to the federal government. The act created the Canadian Environmental Assessment Agency under s.61(1) charged with administering environmental impact assessments. The structure of this agency, as stipulated in the act, provides a clear illustration of how the Act functions.⁵⁵

⁵⁵ <http://www.ceaa.gc.ca/default.asp?lang=En&n=8541A4D1-1>



Source: Eastmain-1-A Powerhouse and Rupert Diversion, Environmental Impact Statement, Volume 1 Chapters 1 to 9.

The timeline followed in the creation of the forgoing pieces of legislation highlights the importance of the James Bay and Northern Québec Agreement as negotiated by the Cree. The Cree insisted on better understanding the consequences of large development projects on their lands and insisted that any future projects be subject to environmental impact assessments before they were allowed to proceed. These assessments were to focus not only on the possible damage to the natural environment but potential harm to human health and Cree culture as well. The Québec Environmental Quality Act of 2000 contains two parts, one for projects undertaken in Québec in general and one specifically pertaining to projects in Northern Québec. Hence, the commitment undertaken in sections 22 (South of the 55th parallel) and 23 (north of the 55th parallel) concerning environmental impacts to the natural environment, human health, etcetera, are codified in Québec law.

The Canadian Environmental Impact Assessment Act first enacted in 1995 and then revised in 2001 reinforces this legal structure for assessing the environmental consequences of projects carried out in the James Bay region. It specifically states that one of the objectives of the Canadian Impact Assessment Agency is to “engage in consultation with aboriginal peoples on policy issues related to this Act.”⁵⁶ The importance of this trilateral regulatory scheme is made clear when we examine the environmental impact study conducted by Hydro-Québec as a prerequisite to approval for the Eastmain-1A and diversion of the Rupert River project commenced in 2002.

This project was further facilitated by more specific agreements signed between the James Bay Cree and the Québec government (and later on by the Canadian government). These agreements were once again necessary to resume Hydro-Québec projects in the James Bay area that were stalled due to the approximately \$4 billion in environmental lawsuits

⁵⁶ Ibid.

stemming from previous environmental and health impacts of Hydro-Québec projects.⁵⁷

Nadoshtin Agreement

The Nadoshtin Agreement allowed Hydro-Québec to build and operate the Eastmain-1 project, as contemplated by the JBNQA. The agreement provides for the implementation of various environmental measures, including remedial and mitigating initiatives, with a view to reducing the impacts of the project on the Cree population. According to the agreement the objectives are:

...to provide for the construction, operation and maintenance of the Project in accordance with the terms of this Agreement, and other matters respecting the Project, in consideration of the rights, benefits and measures in favour of the Crees set out in this Agreement and in the Agreement Concerning a New Relationship Between the Government of Québec and the Crees of Québec.

...to accommodate the respective interests of the Parties in respect to the Project, to provide for environmental, remedial and mitigating measures in respect to the Project, to reduce the impacts of the Project on the Crees, in particular those of Eastmain, Mistissini, Nemaska and Waskaganish and to provide compensation therefor, to protect the Cree way of life, to facilitate the realization of the Project and to enhance community development and provide other opportunities for the Crees;

...to foster increased understanding and respect between the Parties and to promote better relations;

...to provide a more efficient framework for cooperation between the Parties in respect to the Project and to Cree traditional activities on the land;

...to manage road access and fish and wildlife use in the area of the Project during the construction thereof, as contemplated in Chapter 14 and Schedule 1 hereof.

...to provide effective mechanisms for the implementation of this Agreement and particularly the carrying out of environmental, remedial and mitigating measures in connection with the Project;

...to ensure contract, employment and training opportunities to the Crees, in particular those of Eastmain, Mistissini, Nemaska and Waskaganish, in connection with the Project.⁵⁸

Agreement Respecting a New Relationship Between the Cree Nation and the Government of Québec (also Known as Paix des Braves Agreement)

The new relationship alluded to in the title of this agreement is generally thought of as referring to the fact that this agreement was negotiated on a "nation to nation" level.⁵⁹ This recognition of the Cree as a nation has far-ranging implications that will not be fully appreciated until the self-government references made in the Agreement are realized. The preamble to the Agreement stipulates that, "both the Cree Nation and the Québec Nation agree to place emphasis in their relationship on those aspects that unite them as well as on their common desire to continue the development of Northern Québec and the self-fulfilment of the Cree nation." In fact in 2002, a representative of the Grand Council of the Crees speaking at UN Commission on Human Rights said, "the agreement is a great step forward in the development of relations between a government and a First Nation... Québec recognizes that aboriginal rights over land and resources are perfectly compatible with the national

⁵⁷ Thayer Scudder, *The Future of Large Dams*, Earthscan Publishers, 2005 p. 209

⁵⁸ <http://www.gcc.ca/archive/article.php?id=168>

⁵⁹ A new relationship between the Québec government and the Crees of Québec, p. 4 <http://www.mri.gouv.qc.ca/en/pdf/Cris.pdf>

interest. This attitude should encourage governments in other countries to understand that our interests and needs, as First Nations, should no longer be seen as a threat."⁶⁰

In exchange for retracting the environmental lawsuits that the Cree brought against Québec, the province and later Canada, agreed to more autonomy for the Cree Nation, support to overhaul the Cree administrative apparatus to meet the demands of the Cree population today and more control and economic benefits from different natural resources industries with operations in Cree territory.⁶¹ The concepts of environmental impact assessment, human health impacts and Cree consultation on development projects, were also expanded and reinforced.⁶² Where the Eastmain-1A and the diversion of the Rupert River projects were concerned, there was a new environmental impact assessment and Cree consultation structure that was put in place.⁶³ This Agreement was approved by about 70% of the Cree that voted in a secret ballot referendum held in early 2002.⁶⁴ The environmental impact assessment structure was detailed in the Boumhounan Agreement concluded by the Crees, Hydro-Québec and Société d'énergie de la Baie James.

The Boumhounan Agreement

According to the United Nations Environment Programme Dams and Development Project, the Boumhounan Agreement signed in connection with the Eastmain 1-A/Rupert project requires:

...remedial measures, economic and community benefits such as training, employment, contracts, environmental guarantees, commitments and undertakings, and the creation and financing of a joint study group to conduct the Environmental and Social Impact Assessment in connection with the Eastmain 1-A/Rupert project, including hiring of Cree coordinators and representatives and opening of fully equipped project coordination offices in Cree communities affected by the project. Monetary compensation in connection with hydroelectric, mining and forestry development is covered in the financial provisions of the "Paix des Braves" agreement with the Government of Québec.⁶⁵

It is obvious that the power balance between the James Bay Cree and the Québec and Canadian governments has improved significantly since 1971 when there was the Cree were not even notified of what was to take place in their homeland. This arrangement calls for an extensive environmental impact assessment to be carried out in partnership with the Cree, especially Cree hunters and trappers and other individuals with traditional environmental knowledge of the James Bay area. According to the assessment, "in the Boumhounan Agreement, Hydro-Québec promised to consult the Crees throughout the draft-design phase and to enable them to participate directly in the related studies and work. This innovative and demanding participation and consultation process had three objectives: to

⁶⁰ Ibid

⁶¹ Paix des Braves, supra at note 59

⁶² Ibid

⁶³ Ibid

⁶⁴ Scudder, supra at note 57

⁶⁵ http://hqweb.unep.org/dams/documents/ell.asp?story_id=106

improve the various aspects of the project on the basis of the concerns raised by the Crees; to incorporate Cree traditional knowledge of the land and its resources into the studies; and to further acceptance of the project by the host community.”⁶⁶

The new structure for environmental impact assessments called for in the Boumhounan included the creation of the Cree-Hydro-Québec Feasibility Study Group commonly referred to as the Boumhounan Committee. According to the assessment this committee:

...provides a forum where the Crees and the proponent discuss any issues that the parties consider important regarding the execution and results of the studies and field surveys, the project design, impacts and mitigation measures, and information and consultation of the Cree users of the areas affected by the project. The Committee has twelve members: eight Crees, two Hydro-Québec representatives and two SEBJ representatives. In accordance with the Boumhounan Agreement and its community participation objectives, Hydro-Québec signed contracts with the six communities affected by the project (Chisasibi, Eastmain, Mistissini, Nemaska, Waskaganish and Wemindji) agreeing, among other things, to hire full-time representatives and coordinators. Four of the six communities have a representative and a coordinator; the other two (Chisasibi and Wemindji) have only a coordinator. In addition to being members of the Boumhounan Committee, the Cree representatives convey any relevant information about the project and its impacts to their community, inform the Committee of their community’s concerns about the project, coordinate and lead public consultations, and keep their band council and the community chief abreast of developments in the project and the studies.⁶⁷

Table 5-1: Boumhounan Committee Meetings

Meeting	Date	Number of participants	Location
1st	May 23 and 24, 2002	23	Mistissini
2nd	June 11, 12 and 13, 2002	12	Montréal
3rd	June 26 and 27, 2002	12	Montréal
4th	July 23 and 24, 2002	12	Nemaska
5th	October 10, 2002	13	Montréal
6th	December 10, 2002	13	Montréal
7th	January 31, 2003	13	Waskaganish
8th	March 19, 2003	12	Eastmain
9th	April 15, 2003	12	Chibougamau
10th	May 21 and 22, 2003	14	Montréal
11th	July 2 and 3, 2003	12	Montréal
12th	September 24 and 25, 2003	14	Val-d’Or
13th	November 4 and 5, 2003	14	Montréal
14th	January 29, 2004	12	Waskaganish
15th	March 25, 2004	13	Montréal
16th	April 21, 2004	14	Montréal
17th	June 1, 2004	12	Montréal
18th	July 21, 2004	14	Mistissini
19th	September 28, 2004	8	Nemaska
20th	November 10, 2004	16	Waskaganish
21st	December 9, 2004	12	Montréal

Source: Hydro-Québec Environmental Impact Statement

⁶⁶ *Hydro-Québec Environmental Impact Statement*, December 2004, www.hydroquebec.com/rupert/en/etudes.html

⁶⁷ *Ibid.*

The coordinators in the communities are to, “act as liaisons between the proponent and their communities in all matters related to the environmental and technical field studies. They keep the trapline users abreast of the schedule and nature of field surveys, ensure that users are included in the various field teams, inform their respective communities about job or training opportunities for the field surveys and inventories, and check the attendance of Crees participating in the field work.”⁶⁸ This committee met 21 times between May 2002 and December 2004. They also held numerous community meetings and workshops in their relative communities to explain the process and results of the various studies being conducted as part of the assessment.

3.3. Analysis: Evaluation of the Environmental Impact Assessment for Eastmain-1a / Diversion of the Rupert River



Source: Hydro-Québec Environmental Impact Statement

Between 2003 and 2006 the Institut National de la Recherche Scientifique (INRS) conducted a study (referred to on page 5-17 of the Hydro Québec environmental impact statement) on the effectiveness of the this new arrangement for providing information of the environmental and health impacts of the project, to the community members. This study showed how information was transmitted to community members; the adequateness of the information provided and the studies being carried out as part of the environmental impact assessment; the level of participation by the Cree; and to what extent ecological and health concerns of the Cree were addressed by the impact assessment. Koutouki participated in this study conducting about 80 interviews in the most

⁶⁸ Ibid.

impacted communities: Waskaganish, Eastmain, Nemaska and Mistissini in 2003-2004.

The initial results from this study revealed the 65% of those interviewed had never heard of the Boumhounan Agreement and few were aware of the Boumhounan Committee. There had been 3 issues of the Boumhounan Newsletter published at the time of the study. The newsletter, that was conceived to keep community members informed on the project and the environmental impact assessment, had been seen by about 60% of the people interviewed but only 20% actually read it in whole or in part. The most informed participants in the study were those with some sort of an administrative position in the communities. All of the collaborators knew the Paix des Braves Agreement and that the Rupert River was to be diverted.⁶⁹

Participants in all communities often made references to the experience the region had with the initial hydro project (La Grande). The environmental devastation (eg. draining of the Eastmain River) and the health impacts (increased mercury levels) were very prominent in their minds and therefore were very eager to have their questions answered regarding this project.⁷⁰ According to the report, "les inquiétudes les plus vives cependant se canalisèrent autour des risques environnementaux associés au projet et susceptibles de se répercuter autant sur la santé des animaux que sur la santé des humains: Pollution, contamination de la chaîne alimentaire et de l'eau potable, mercure."⁷¹ There were also significant concerns revolved around the impact on the aesthetic and cultural value of the region to be flooded. For example the fate of cultural activities associated with the Rupert River (Canoe Brigade) once the diversion of the river. The Elders were particularly preoccupied by the loss of the Rupert River as a cultural heritage.⁷²

Some community meetings were open to the public in general and others were held to respond to the concerns of a particular segment of the community. In either case the community members voiced their concerns and sent questions back to Hydro concerning the environmental impact assessment studies. For example some of the questions asked in a meeting held for the trappers of Nemaska included:

- Is it possible to extend to 60 days the duration of the 416m³/s instream flow at the time of the spring spawning season?
- How was the 45 days period set for the instream flow during the spawning season?
- Will the eggs dry out because of the diminished instream flow at the end of June?
- What will happen in the fish spawn before they open the spillway?
- Under present conditions the, water occasionally flows over the ice in the winter, making it difficult to snowmobile on the river. Will the diversion have any effect on the phenomenon?
- What effect will the increased organic matter have on the slow and fast flow areas?
- How will flow volume and velocity in the Rupert River affect the flow of sediment especially for tributaries in uncontrolled sections?

⁶⁹ Lévesque, C. et al. Transmission, circulation, et diffusion de l'information à Eastmain, Waskaganish, Nemaska et Mistissini : Projet de central de l'Eastmain-1A et de dérivation Rupert, 2006, INRS, p. 9

⁷⁰ Ibid. at p. 15

⁷¹ Ibid.

⁷² Ibid. at p. 17

-Did the study consider the sturgeon habitat in the south branch (Sipastikw) of the Rupert River upstream from KP 281? Are there any remedial measures being considered?⁷³

These questions were very pertinent given the size of the area to be flooded:

Diversion bays	Existing water bodies (km ²)	Land area flooded (km ²)	Total area (km ²)
Forebay	100.6	128.1	228.7
Tailbay	57.5	60.0	117.5
Total	158.1	188.1	346.2

Source: Hydro-Québec Environmental Impact Statement

By 2005 and 2006 most of the shortcomings identified in 2003-2004 by the INRS study were overcome. The Boumhounan Convention, Committee and Newsletter, all saw significant increase in visibility and most of the participants felt that they were reasonably well informed on the progress of the project and the results of the environmental impact assessment.⁷⁴ The trappers and tallymen were generally satisfied with the information meetings held specifically for them. According to the report, for two-thirds of the collaborators "l'information livrée était claire, voire très claire dans quelque cas."⁷⁵ The majority of the criticisms revolved around the quality of the Cree translation, the difficulty of the English used, too much information being discussed in too short of time and lack of visual aids. The participants would have also liked to have a chance to discuss the environmental impact studies being carried out with the scientists responsible for the studies.⁷⁶

However, irrespective of the quantity and quality of the information provided, one of the major concerns the people remains health concerns due to the environmental impacts of the project. Any environmental impact on water quality, vegetation, animals and fish health, has a direct impact on a people so closely tied to their natural environment especially when it comes to the harvesting of food. According to the Hydro-Québec environmental impact statement, "...in the early 1970s, high levels of mercury from both natural and industrial sources were measured in Crees...follow-up studies conducted under the Mercury Agreement (1986) have shown that mercury levels in Crees are constantly decreasing."⁷⁷

However the Eastmain-1A project brings about new concerns over mercury as addressed in the environmental impact statement. The proponent's statement concludes that:

In short, more restrictive fish consumption guidelines for adults will apply to fish in the Rupert diversion bays (lake whitefish, lake sturgeon, northern pike, walleye and lake trout), the Lemare River (lake whitefish), and the Nemiscau River (lake whitefish, walleye and lake trout), and the restrictions will last a year longer for Eastmain 1 reservoir (lake whitefish, walleye and lake trout). Hydro-Québec,

⁷³ Ibid. at p. 23

⁷⁴ Ibid. at p. 28

⁷⁵ Ibid. at p. 40

⁷⁶ Ibid. at p. 41

⁷⁷ Hydro-Québec, supra at note 64, Summary Report, at p. 4-32

in cooperation with the relevant Cree organizations, will monitor the changes in fish methylmercury concentrations and will issue timely information on any new guidelines concerning fish consumption. The Bouhmounan Agreement calls for an Eastmain-1-A/Rupert Mercury Fund to be used, among other things, to facilitate access to replacement fishing sites and to enhance fish habitats. The implementation of various risk management measures will enable users of the area to continue to consume fish without being exposed to the undesirable effects of mercury.⁷⁸

The proponent's statement further reports that:

The Eastmain-1-A-Rupert project will cause a temporary increase in the natural mercury content of fish in certain water bodies in the region. According to the forecasts in chapters 10 and 11, the maximum increase will be three to six times the natural content, depending on species, the time since impoundment and location. The mercury levels of the various species in the water bodies affected by the project will be measured regularly to monitor the changes in mercury content with greater precision until natural conditions resume.⁷⁹

The issue of mercury contamination also brings about the issue of gender vulnerability to the environmental impacts of the project. According to Health Canada:

Health Canada believes that the reference value for the most vulnerable group should also be applied for women of child-bearing age, rather than just for pregnant women. This is an important nuance in our view because neurological effects on foetal development may occur as early as the first trimester of a pregnancy...With the half-life of methylmercury being about two to three months, women of child-bearing age should be informed of the risks so that they can adjust their fish consumption and reduce their body burden of mercury before they become pregnant. As noted in Section 2.2.1, the Tolerable Daily Intake for women of child-bearing age is 0.2 (g /kg/d, as recommended by Health Canada and WHO (0.23 (g /kg/d). This reference value should also be applied to children, a group that is also vulnerable to methylmercury exposure. Since the age at which a child's sensitivity to the effects of methylmercury would be considered equivalent to that of the general population has not been clearly established, Health Canada recommends considering children up to age 12 as part of the vulnerable group.⁸⁰

This is a very important element of the impacts of the project on community members and women in particular. We must remember that Indigenous communities in Canada have a high proportion of child-bearing women and children. The James Bay Cree communities are no exception. According to Statistics Canada, "the median age for the Aboriginal population was 24.7 years, while that of the non-Aboriginal population was at an all-time high of 37.7 years.... Children aged 14 and under represented one-third of the Aboriginal population in 2001, far higher than the corresponding share of 19% in the non-Aboriginal population. Although the Aboriginal population accounted for only 3.3% of Canada's total population, Aboriginal children represented 5.6% of all children in Canada."⁸¹ However, it is precisely the large youth population in Aboriginal Communities that is a key factor in those communities accepting large development projects. The youth in these communities live between two cultural realities, the traditional living off the land and the modern salary driven one. In order to respond to the demand for salaried positions, the communities must engage in economic development that will stimulate job growth. At the same time however, Children are much more

⁷⁸ Ibid., at p. 6-23

⁷⁹ Hydro-Québec, supra at note 64, at p. 16-110

⁸⁰ Health Canada, supra at note 11, at page 6

⁸¹ <http://www12.statcan.ca/english/census01/Products/Analytic/companion/abor/canada.cfm>

susceptible to environmental contaminants than adults.⁸² Proven or suspected detrimental links between various chemicals and the health of children are continuing to accumulate.⁸³

5. Conclusion

One of the most difficult issues to resolve for remote aboriginal communities is how to provide employment for their community members. Urbanization has been the answer for many aboriginal and non-aboriginal Canadians to the problems or economic underdevelopment in rural or remote areas. A higher level of exodus than what is currently present would be disastrous for some of these communities whose population numbers range from a few hundred to a couple of thousand. Thus community leaders have no option but to focus on economic development to provide community members with the means to earn a living. The question becomes then, are these communities offered the option of choosing sustainable development projects? Experience shows that the answer is no. In fact this is the biggest criticism put forth concerning the James Bay Project in all its phases, was it necessary and was there a more sustainable way to harness energy and drive economic development in the region?

Environmental impact assessments are notoriously difficult to evaluate as they involved various controversial dimensions: Science, Politics, and Economics just to name a few. In the James Bay case, conventional science had to incorporate traditional knowledge; political dynamics were present at every level from the communities to the provincial and federal levels; and the economic spin-offs, substantial for all stakeholders. There is no doubt that this innovative structure put in place for environmental impact assessments had some growing pains in the beginning but it should be noted that an enormous effort was exercised by all parties to successfully complete the assessment.

There were however some important criticisms of the process. First, there was widespread discontent throughout all the communities over the fact that their government, the Grand Council, negotiated the Paix des Braves Agreement without consulting the people. The Agreement in Principle was fully negotiated when it was announced in the communities. Even though the community members had the right to a referendum, many were

⁸² Union of Ontario Indians Anishinabek Health Secretariat, "Through the Eyes of a Child: First Nations Children's Environmental Health" 2009 at 12.

Prenatal exposures, where contaminants pass through the placenta, have the potential to interfere with healthy development leading to possible birth defects in early pregnancy or harming later brain function if exposure occurs during late pregnancy. Vulnerability continues from birth and throughout childhood, even into adolescence as children's bodies continue many different developmental processes... Compared to adults, children consume larger quantities of food and water per unit of body weight. They also breathe faster than most adults and their lungs have a comparatively smaller (and still developing) internal surface area. These differences expose them to larger quantities of any contaminants contained in air, food or water...Absorption of contaminants also varies. For example, a child's body will absorb approximately 50-90% of ingested lead while adults only absorb about 10% of ingested lead. An infant's skin is more permeable and will absorb more contaminants than an adult. Of major concern, the immature blood-brain barrier of a child continues to develop for at least the first three years of life making the early years of rapid brain development also a time of high vulnerability to contaminant exposures.

Also see in general: Rebecca Kokish, Children's Environmental Health--International Actions and Implications (2003) 14 *Colo. J. Int'l Envtl. L. & Pol'y* 143.

⁸³ Please see:

United States Environmental Protection Agency: *Toxicity and Exposure Assessment for Children's Health* <http://www.epa.gov/teach/teachsummaries.html>

unhappy with this top-down approach than is contrary to the traditional values of the Cree. Second, many community members and Québec civil society in general felt that the proponent did not effectively communicate alternatives to the project. For example could wind or solar power provide the energy to be gained from the additional generators at Eastmain? Furthermore, was the diversion of the Rupert River even necessary given the energy needs of the province? Many felt that these sorts of questions should be part of an environmental impact assessment as they provide a precautionary alternative to the environmental impacts inherent in hydroelectric projects. Third, there was a lack of information concerning the human health aspects of the project. Finally, many environmental activists agreed that the proponent followed the environmental impact assessment procedure but at the end of the day the feeling was that the project was to be approved despite the extensive environmental assessment and the resulting environmental damage.

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