Seeking higher ground

Riparian vulnerability and the annual evacuations of Kashechewan First Nation

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The deep, thunderous sound of a crack. The voice of a solid mass—a slow moving ice cover—sharply divided by a powerful force beneath it. A northern river breaks free from its winter cage, assisted by the heat of the changing air that increases its flow, and expedites its course towards the ocean.

This sound is a signal of the arrival of spring. For Aboriginal communities, like the Cree of northern Ontario, the primaveral awakening of the earth allows them to reconnect with their ancestral lands through traditional practices such as hunting and fishing.

For the Cree band of Kashechewan First Nation, however, the arrival of spring is now associated with displacement, frustration, and for some, depression. Located on low-lying land at the mouth of the Albany River, this riparian community has experienced either partial or complete evacuation—to a number of towns throughout Ontario—due to rising levels of the Albany River. Kashechewan has been evacuated seven times in the past 11 years (ICI Radio-Canada, 2015, April 23) due to rising river level, or water contamination,[1] with 2015 marking the fourth successive displacement linked to flood risks (National Post, 2015, April 27).

Set within the context of an acutely changing climate in the north, even greater changes are expected in the surrounding environment of Kashechewan First Nation. The rate of landmass warming in Canada has been double that of the global average between 1950 and 2010. This rate has been occurring at an even faster pace for northern regions, and within winter and spring seasons. Annual average precipitation is increasing, with a rise in minimum river flows in the North. This wetter Canadian climate is also reflected in increased snowfall in northern areas. Contrariwise, snow cover is experiencing negative trends, particularly in the spring (Natural Resources Canada, 2014). The flooding of Kashechewan First Nation aligns with the observed reshaping of the natural environment of the Canadian north as "a range of climate-related natural hazards continues to impact communities, presenting increasing risks to future health. Recent flood and wildfire events have severely impacted communities through destruction of infrastructure and displacement of populations." (Natural Resources Canada, 2014, p.4).

This paper explores the impact of recurrent, short-term displacement—in the form of annual evacuations—on community health and livelihoods, through the lens of the First Nation communities located in the James Bay area of northern Ontario. First, the paper will provide a historical overview

[1] In 2005, Kashechewan First Nation's water supply was contaminated with E-coli "resulting in numerous and widespread health problems" (Adkin, 2010, p. 232).

of colonialism, riparian rights and Aboriginal peoples in Canada. Against this background, it will expand upon the cause of the floods and the consequences of successive displacement. Finally, it will review government responses and discuss some of the challenges in developing adaptation and mitigation strategies for Kashechewan First Nation.

Riparian Rights And Colonialism In Canada

Prior to European settlement in Northern Ontario, the James Bay region had been inhabited by Aboriginal peoples, including the Cree, who traveled freely across these lands as part of their traditional hunting practices, and who chose to remain inland during the flood season (Barei, 2012). For Aboriginal peoples, land and riparian rights are agreed upon by virtue of proximity, and involve rights of occupation and use (Sproule-Jones, Johns, & Heinmiller, 2008, p. 80). This traditional understanding of land and riparian rights would play an important role in the land acquisition of settlers, whose land rights entitlements are based on ownership.

In 1905, Treaty Number 9—also known as the James Bay Treaty—was signed, initiating an appropriation process that would cede "almost two-thirds of the area that became northern Ontario" (Aboriginal Affairs and Northern Development Canada, 2010) to the Canadian government. In Canada, "numbered treaties were used by the government to secure the 'surrender' of lands by those of aboriginal descent in exchange for certain rights" (Barei, 2012, p. 13). These rights would include relocation to designated tracks of land—or Reserves[2]—where the lives and livelihoods of First Nation communities could persist without interference.

The Cree band at the Old Fort Albany settlement faced further relocation in 1957 due to a religious dispute—a by-product of missionary work in the region. One faction of the community was subsequently placed on a flood plain[3] by the Federal government "ignor[ing] advice that the houses should be further upstream to prevent water damage" (Murdocca, 2010, p. 376). The Cree community named this Reserve 'Keeshechewan', meaning 'where the river flows fast', in Cree language. A spelling mistake on a signpost created by the Canadian government gave the community its current name:

[2] "Reserves may serve as spiritual and physical homelands for their people, but they are also tangible representations of colonial governance. As such they are often the focal point of activism relating to land claims, resource management, cultural appropriation, socio-economic conditions, self-governance and cultural self-determination" (McCue, 2001).

[3] "Flood plains are lands situated next to the permanent course of a river that are periodically flooded during heavy flow periods" (Sproule-Jones, Johns, & Heinmiller, 2008, p.26)

Kashechewan. This Reserve has faced flood and displacement risks ever since (Kapuskasing Times, 2014, May 16).

History Of Flood And Displacement

Recorded evacuation of Kashechewan First Nation due to flooding and flood risks dates back to 1976 (Hatch, 2015). In 1995—after five evacuations (Hatch, 2015)—the Canadian government invested CAD 16.1 million[4] to build a 5 kilometer long and 3.5 kilometer high ring dike to protect Kashechewan First Nation from rising river levels, and to prevent flooding (Abdelnour, 2013). However, the heavy ice pushed towards the riverbank throughout the annual ice breakup season puts pressure on the existing infrastructure, eroding it gradually.

In 2005, two major evacuations were linked to floods, with a third linked to a water crisis that saw an E-coli outbreak in the community. For the latter, one quarter of the community's residents had to be airlifted out of Kashechewan First Nation to seek medical attention (CBC News, 2006, November 9). For the subsequent decade, life in Kashechewan First Nation has continuously been disrupted by flooding and displacements.

The most severe flood was recorded in 2006 (Hatch, 2015), and that year's evacuation saw a delayed return by community members to the Reserve by a month due to a backed-up sewage system that called for some houses to be decontaminated or rebuilt (ICI Radio-Canada, 2006, May 26).

Difficult weather conditions interrupted the 2008 evacuation causing the most vulnerable to be evacuated first by military aircraft, then 450 residents a few days later, and the remaining 650 residents the following day (CBC News, 2008, April 28). Four years later, a change in river flow caused the 2012 evacuation to be suspended, after the most vulnerable members of the community had been airlifted out as a preventative measure (ICI Radio-Canada, 2012, March 26). In 2013, snowmelt backed up sewers resulting in the need of a partial evacuation of 40 households—roughly 200 residents. Water levels had reached nearly two meters in these homes (ICI Radio-Canada, 2013, May 1).

The following year (2014), three large military aircrafts assisted the complete evacuation of Kashechewan First Nation (ICI Radio-Canada, 2014, May 12), and heavy ice jams damaged the dike severely. A delay in

[4] Approximately EUR 11 million using the spot rate available on www.xe.com on 03 April 2016. Figure taken from (Shimo, 2012).

receiving funding from the government left the dike unrepaired prior to the water's freezing in 2015, thus increasing the flood and displacement risk for that year. Culverts in the dike meant to allow water to flow out of the Reserve actually brought water into the community (NDP Newsroom, 2015, March 31).

In all instances, evacuations required airlift and the Cree band had been scattered to various towns throughout Ontario, taking refuge in hotels and other forms of temporary accommodation, with meals provided in arenas and other public buildings in the receiving communities.

Aboriginal Affairs and Northern Development Canada (AANDC), who invested in building the dike, has funded its upgrades and repairs in recent years. The department is also working with the community to develop an infrastructure investment plan that would schedule repairs and regular maintenance to ensure the dike serves as an adequate flood protection system, while ensuring wastewater evacuation (Aboriginal Affairs and Northern Development Canada, 2016).

Kashechewan First Nation, however, has maintained that the dike does not fit Canadian standards and that it is unfit to protect the community against the powerful Albany River. In 2015 the results of an engineering report commissioned by Kashechewan confirmed this belief. In an interview with the Canadian Broadcast Corporation (CBC), New Democratic Party (NDP) Member of Parliament (MP) Charlie Angus[5] explained that: "The report ... ha[s] warned that the deteriorating condition of this dike wall has placed the community at 'intolerable risk", adding that "if there was a sudden rise of water, lives could be put at risk." (CBC News, 2015, March 31).

Emergency Coordination And Early Warning Detection Systems

Federal support for flood preparation and mitigation measures in First Nation communities is coordinated by AANDC. The department is also responsible for supporting flood watch for the Mushkegowuk Tribal Council,[6] which Kashechewan First Nation is a member. Additionally, AANDC supports—through a contractor— work with First Nation communities to review and update Emergency Management Plans and to train for

[5] Charlie Angus is the elected MP for Timmins-James Bay, the riding that includes Kashechewan First Nation.

[6] Mushkegowuk Council is a non-profit regional chiefs' council representing Cree First Nations in Northern Ontario.

emergency preparedness (Aboriginal Affairs and Northern Development Canada, 2016).

Kashechewan First Nation has also been proactive in developing tools to help mitigate flood risks. With the assistance of the engineering firm Hatch, the community developed a simple ice-breakup forecast tool through tracking historical river flow records upstream from the community. The tool has been effective in providing an advance warning of 10 days based on the severity of ice breakup and its subsequent likelihood to cause flooding. Half of that time allows for an emergency airlift evacuation, and the other half serves as a buffer for adverse weather conditions (Shaw, Lavender, Stephen, & Jamieson, 2013).

Based on an analysis of historical data from 2008 and 2013, the tool has been able to establish criteria for high flood probability. If high ice accumulation occurs before 28 April of any given year, for example, the air temperature will not allow for enough melting to prevent ice jam flooding. Additionally, if snowmelt and rainfall accumulation is greater than 150mm there is a serious risk of ice jam flooding (Shaw et al., 2013).

Events Surrounding the 2015 Flood and Evacuation

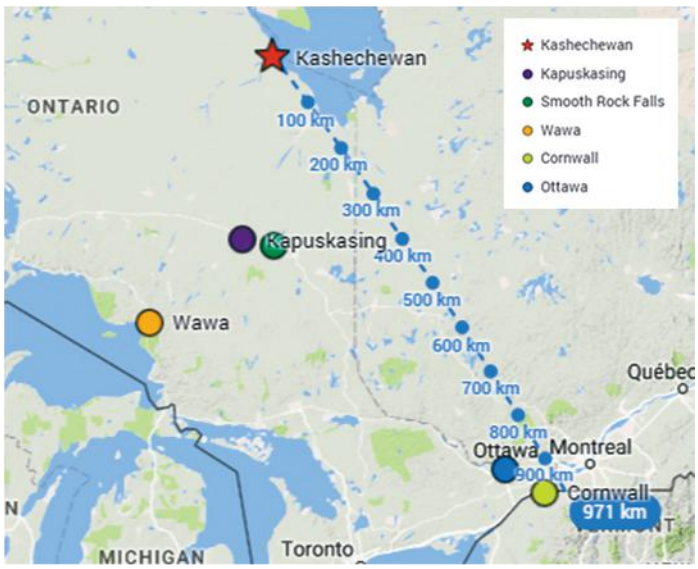
On 23 April 2015, the first step of the now annual evacuation of Kashechewan First Nation resulted in the airlift of 600 of the community's most vulnerable members—mostly the elderly—to towns further south throughout Ontario. The evacuation was coordinated by Emergency Management Ontario, at the request of Kashechewan First Nation Chief Derek Stephen. Observations of the Albany River indicated a rapid river level rise that year, and the evacuation served as a preventative measure.

Two days later, 1,400 residents—accounting for 94% of the on-reserve residents and 74% of the Reserve's total population[7]—had been relocated to multiple locations throughout Ontario: Kapuskasing, Smooth Rock Falls, Wawa, Ottawa and Cornwall. The latter accounts for a distance of nearly 1,000 kilometers from the Reserve.

The remaining residents were scheduled to be evacuated shortly afterwards, with approximately 20 members elected by the community to remain in Kashechewan to monitor the river and ensure security of the homes and infrastructure (ICI Radio-Canada, 2015, April 26).

[7] Population fluctuates since a large number of people leave the community temporarily for education, employment and housing purposes (Faries, 2015).

Image 3. Ice cover on the Albany River.



Source: CBC News Sudbury, 2015

By 27 April 2015, water flow had increased to the point where a complete evacuation was ordered, including the 20 residents assigned to stay behind, and even pets (National Post, 2015, April 27).

Rising River Levels in Subarctic Regions—The Relationship Between Hydroclimatology, Snowmelt Discharge and Air Temperature

Erratic weather conditions—such as rapid rises in air temperature and increased rainfall—lead to premature breakups of ice cover on rivers. For the James Bay area, where Kashechewan is located, ice breakup occurring before the end of April is considered as premature.[8] Increased rainfall and air temperature melts the snowpack—masses of compressed, hardened snow—forcing thick, strong masses of ice into the river flow. Warm air also increases river flow, further breaking up the ice cover, pushing large pieces of ice towards the banks of the river as it continues its course towards the ocean.

[8] The Kashechewan evacuation of 2015 occurred during the third week of April.

Once the ice jams in one area of the river's flow, it causes buildup or a rise in water level elsewhere along the flow. In the James Bay area, this has caused repeated flooding of the low-lying Kashechewan, but ice jams downstream can also protect the Reserve by redirecting flood water to towns upstream. Timing and location of ice jams are therefore crucial in predicting flood patterns (Abdelnour, 2013).

Evidence shows that the James Bay region is warming, with "significantly earlier ice breakup events by 0.8 days per year, and significantly longer ice-free seasons by 0.32 to 0.55 days per year" (Tam, Gough, Edwards, & Tsuji, 2013, p. 443) with acute changes in the Albany River's break up time. Average temperatures in the region are also on the rise.

Consequences of Repeated Displacement

Despite the recurrence of the displacement and the existence of an early warning system, the evacuation of Kashechewan First Nation is carried out under emergency situations. In 2015, "due to the urgency of the evacuation, people just got scattered all over the place without going with their families" explained Kashechewan First Nation Chief Derek Stephen in an account published by Global News (Miller, 2015). Families are also susceptible to separation due to the phased evacuation process where the most vulnerable community members—children, the elderly and the sick—are removed first. In an emergency, community members are not given a choice about their shelter location.

The impact of the recurrent flood and displacement risks have exposed the community to the threat and realities of both economic and non-economic loss and damages.

Loss Of Livelihoods

Spring marks the migratory path north of geese, a traditional food source for the Cree. Goose break season is therefore an important hunting period dating back centuries. It also forms part of the cultural heritage of the Cree, passed from parents to their children (Shem & Robertson, 2014). MP Charlie Angus, a critic for AANDC, stated that: "The evacuation taking place during goose break season means it interrupts peoples' opportunity to provide food for their families in the coming year. It's emotionally traumatic, culturally disruptive and has an enormous emotional impact on the people of Kashechewan." (East, 2015).

The annual floods and evacuations also impact future employability of Kashechewan First Nation's children. As a result of recurrent evacuations, children of the community have been unable to complete a full school year in four consecutive years. Only one child graduated from high school in 2015, a dramatic decrease from the usual range of 10 - 14 graduates.[9] Delays in completing secondary schooling leads not only to delayed entry into the workforce, but can also lead to increased delinquency and dropout rates (Miller, 2015).

Psychological Impact

Subjected to annual removal from their ancestral lands has created a demand for psychological support in their sheltering towns by members of the Kashechewan First Nation. This stress is strengthened by the fear for some, and reality for others, of permanently losing their physical possessions due to the damages caused by repeat flooding (Lapierre, 2016). Commenting on the fact that he had received many requests for psychological support from members of the Kashechewan First Nation community, Gerry Demeules, General Manager of Protective Services for Kapuskasing, explained that "for them, there are many memories, it is hard to believe that they will no longer have all of the things that belong to them over there"[10] (Lapierre, 2016).

The emotional distress described above can only be exacerbated by the fact that the residents of Kashechewan are scattered across multiple locations, at times separating families. In an account provided to CBC News Sudbury, Kashechewan community member Ruby Wesley explained: "we have to leave our personal belongings behind, our family members, some of them are still there. We don't know where they are going. It's kind of frustrating it has to happen every year." (CBC News, 2014, May 13). Volunteers from non-governmental organizations, such as The Canadian Red Cross, endeavor to ease this stress by registering each evacuee, thus providing a system for separated family[11] members to reunite (Snider, 2014). The

[9] Obtaining census information and other data on Kashechewan First Nation (through the National Household Survey), is difficult as many residents refuse to participate. This data has been suppressed by Statistics Canada for confidentiality purposes. Source: Correspondence with the Aboriginal Liaison Officer of Statistics Canada on 06 April 2016.

[10] Translation of: "Pour eux, c'est beaucoup de souvenirs, c'est dur de penser au fait que tout ce qui leur appartient est là-bas et qu'ils ne l'auront plus."

[11] Due to the emergency situations in which the evacuations take place, and/or with phased evacuations were the most vulnerable community members are removed first, families are susceptible to separation during the evacuation process.

separation, however, suggests that community members are not consulted about the choice of their relocation.

Chief Stephen has linked the stress of this separation to delinquency and crime. Shortly after the 2015 evacuation, two community members were charged with unrelated crimes. The Chief implored the sympathy of the residents of their shelter towns, explaining that the multiphase evacuations had negative impacts on the community, and that "people have better control when they're in one area with families and they're able to look after each other..." (Miller, 2015).

MP Charlie Angus supported this view in an interview with the CBC. Touching upon the psychological impact of the recurrent evacuations on children, he explained that it was "incredibly traumatic [...] to be taken out of schools, to be evacuated to emergency centers [...] all over the province, separated from each other" (CBC News, 2015, April 24).

Chief Stephen has also linked the annual floods to high rates of depression and suicide attempts in the community (NDP Newsroom, 2015, March 31). In January 2007, 21 people in the Reserve made attempts to take their own life, including a nine year old child (La Rose, 2013) drawing national attention to the 'crisis'. Suicide crises plague many First Nations in Canada. In 2015, a study regarding suicide attempts was conducted in the community, for which the respondents attributed flooding and the breakup season to their psychological trauma (CBC News, 2016, May 4).

Displacement, Image and Identity

A study on the impact of loss of personal possessions due to a natural hazard—a firestorm in the United States—suggests that "loss of possessions from involuntary disposition can cause a corresponding change in personal identity" (Sayre, 1994, p. 113). The paper draws on a broad literature review that links loss and damage of possessions to a disruption in finding meaning in experience; associating physical goods as an extension of self.

The media also plays an important role on self-image and identity in the context of successive displacements. Constantly being portrayed in the media as vulnerable and in need of rescue, can not only influence how the broader Canadian public perceives the Cree band of Kashechewan First Nation, but also how the community perceives itself. In this regard, there needs to be a clear distinction between an evacuation and a rescue in the media landscape, as "discourses that cast specific communities as either victims or as inherently vulnerable create the risk of self-fulfilling

predictions of dependence, incapacity, and exclusion" (Howitt, Havnen, & Velan, 2012, p. 48).

Using Google Trends, the graph below identifies the top queries associated with the search term 'Kashechewan First Nation", and provides a timeline of interest—based on search engine results—for that term. The graph shows that there is very little interest—based on Internet searches—in the community. However, the little interest that is generated can be linked[12] to events that have had negative impacts on the Reserve. The highest peak in interest falls in late 2005 / early 2006, immediately following the community's water crisis. Moreover, the top queries related to Kashechewan First Nation are: "evacuation", "flooding" and "rash".

Internal Displacement

The UN Refugee Agency (UNHCR) defines internally displaced persons (IDPs) as those who have found sanctuary from a conflict within their own country, or who have been made homeless by a natural hazard and have not had to cross international borders.

At the time of reporting, 400[13] Kashechewan First Nation community members had not returned home from the 2014 evacuation, and were still sheltered in temporary accommodation in the town of Kapuskasing (Lapierre, 2016).

This inability to return to the Reserve is due to the fact that repeated flooding and overflowed sewage systems have left many homes vulnerable to mold. Forty[14] of the 280 homes—or 14%—have been deemed unfit for return due to mold (Dehaas, 2016), leaving an entire neighborhood abandoned (East, 2015).

The absence of 26% of the on-reserve population likely impacts those able and unable to return, although to differing degrees. The absence could be particularly impactful on the lives and morale of children as their class sizes would shrink significantly.

Those unable to return remain disconnected from their traditional land, an important aspect of Cree life. In an interview by ICI. Radio-Canada (Lapierre, 2016), one displaced resident described her difficulties in adapting

[12] "Rising searches are terms that were searched for with the term you entered, which had the most significant growth in volume in the requested time period. "Breakout"... means that the search term grew by more than 5000%." (Google Trends, n.d.).

[13] This figure was originally estimated by ICI.Radio-Canada (2015, April 26) at 350 persons.

[14] ICI. Radio-Canada reported 36 homes condemned due to mold (Lapierre, 2016).

to the new city, managing depression, and ensuring that the six grandchildren currently under her care remained connected to their traditional language. Cognizant of the latter, the Canadian government coordinates with the towns sheltering the Kashechewan evacuees to facilitate schooling in English and Cree language (Lapierre, 2016).

Relocation As A Form of Adaptation

Government View

In 2006, the Canadian government commissioned a report analyzing the viability of potential relocation sites for Kashechewan First Nation. The study was lead by Alan Pope, a former politician in Ontario, who in an interview with the Timmins Times confirmed that he had conducted household surveys as part of his research method (Gillis, 2015).

Table 1: Summary of the sites considered in the Alan Pope report

Proposed Strategy	Issues
Relocating to Site 5 *A site slightly inland from Kashechewan First Nation*	Access to the supply boat would be more difficult and would require supporting infrastructure: extension of the winter road during the cold season and need of a road along the flood plain during the flood season. Flood would isolate community for extended periods of time.
Raising Kashechewan *by 9 meters*	Would require a near new rebuild of the city's infrastructure and flooding would still isolate the town for extended periods.
Relocation to Fort Albany	Fort Albany faces flood and displacement risks, although less frequently than Kashechewan. The contentious history with the Reserve due to a religious dispute in the 1970s poses risks of conflict.
Relocation to Smooth Rock Falls	Distance from ancestral lands, disruption of traditional practices and assimilation concerns.
Relocation to Bigwater Lake *near Timmins, Ontario*	Loss of access to traditional lands.

Source: Gillis, 2015

In 2006, relocation to a Reserve created for the community in the periphery of Timmins, Ontario—the nearest urban center, 550 kilometers to the south—was deemed the most viable option for Kashechewan First Nation by the government. The creation of a Reserve would reduce risks of perceived assimilation attempts, while living in the periphery of an

urban center would increase access to health and education services, and to employment opportunities (Gillis, 2015). Proximity to an urban center would also significantly reduce living costs. This option was rejected by Kashechewan First Nation in 2007 (ICI Radio-Canada, 2007, March 16).

The community favored the option of moving to Site 5—a site 30 kilometers inland from Kashechewan—so that the Cree band could remain close to their ancestral grounds (ICI Radio-Canada, 2015, April 23). A similar move had been successfully achieved in the 1980s for the flood-prone community of Peawanuck in Northern Ontario—a community that remains vibrant to date (CBC News, 2015, April 24). Remaining in the region would also ensure that the community could benefit from any future mineral exploration in the area (Gillis, 2015). The Canadian government subsequently rejected the plan, stating that it was too expensive (ICI Radio-Canada, 2015, April 23).

In a video interview with CBC News, MP Angus confirmed that there was an agreement with the federal government and that a community plan was in place, however the government opted to pledge repairs of the dike wall instead. He emphasized the point by stating: "we had a plan to move the community to higher ground but the government walked away on it" (CBC News, 2015, March 31).

In almost all news coverage of the Kashechewan floods, costs estimates have been circulated for both the evacuations and the proposed relocations.

Kashechewan Chief Stephen estimated the cost of the 2014 evacuation at CAD 21 million[15], to which several additional million supported post-flood repairs. The latter resulted in a delayed return of the residents by one month[16] (ICI Radio-Canada, 2015, April 26). Estimated daily costs for the 2015 evacuation were CAD 280,000[17] (ICI Radio-Canada, 2015, April 23), with figures inflated by the need to evacuate residents by plane.

Incomplete data availability on the floods and evacuations of Kashechewan First Nation holds true for the Canadian Disaster Database, managed by Public Safety Canada[18]. Although entries for the Kashechewan floods date

[15] Approximately EUR 14 million using the spot rate available on www.xe.com on 03 April 2016.

[16] This excludes the 400 persons who, at the time of reporting, had still not returned to Kashechewan due to high mold levels in their homes.

[17] Approximately EUR 188,000 using the spot rate available on www.xe.com on 03 April 2016.

[18] "Public Safety Canada was created in 2003 to ensure coordination across all federal departments and agencies responsible for national security and the safety of Canadians" (Public Safety Canada, 2015).

back to 2005, only one entry was complete with cost information. The database holds a record for an evacuation of 269 persons on 24 March 2012 at a cost of CAD 6,700,000[19].

The situation has also been met with costly, temporary solutions for the community including: (i) government funding of CAD 75,000[20] (ICI Radio-Canada, 2015, April 23) to hire a flood coordinator for Mushkegowuk Council; (ii) CAD 200 million for infrastructure repair; and, (iii) CAD 27.4 million to renovate and build homes (Shimo, 2012).

The cost for the relocation to Site 5, situated 30 kilometers away from Kashechewan, was estimated in 2007 by Jim Prentice, former Minister of Indian Affairs and Northern Development[21], at CAD 500 million (ICI Radio-Canada, 2007, March 16). In 2015, the cost was estimated at CAD 750 million by Chief Stephen (ICI Radio-Canada, 2015, April 26). The estimated cost for relocation to Timmins, Ontario is CAD 200 million.

Through this lens, it seems evident that relocation—particularly to Timmins, Ontario—is the most cost effective policy response for Kashechewan's riparian vulnerabilities. The estimates above, however, do not take into consideration the full financial, social and cultural costs associated with the relocation of First Nations. A report prepared by the Centre for Indigenous Environmental Resources (CIER) specifies the need to account for the non-financial costs of "loss of homeland, loss of cultural or ceremonial sites, loss of Aboriginal and Treaty rights, and resulting loss of identity" (Centre for Indigenous Environmental Resources, 2006b, p. 11).

Community View

Kashechewan First Nation undertook a collaborative assessment of their situation with the aim of presenting their own views on a viable relocation strategy. When asked questions about where they wanted to live and why, the responses of the Cree band channeled their deep connection to their physical environment.

Although the community identified a need to increase access to health, education and employment services, Site 5 was still preferred over the

[19] Approximately EUR 4.5 million using the spot rate available on www.xe.com on 08 May 2016.

[20] Approximately EUR 51,000 using the spot rate available on www.xe.com on 08 May 2016a.

[21] The name of the Ministry has subsequently been changed to Aboriginal Affairs and Northern Development Canada (AADNC).

other options presented in the Alan Pope report as it would allow them to maintain their traditional way of life. Traditional practices such as hunting would also keep the First Nation connected to their traditional food. Proximity to clean water was deemed important, as was the ability to see the river—with a view unobstructed by the dike (Faries, 2015). From a spiritual standpoint, Cree people believe that "the Creator was within the land and that the spirits of their ancestors will continue to live on the land" (Faries, 2015, p. 106).

Views on relocation by the affected community do not remain unwavering, however, and can be influenced by the compounded distress caused by successive displacements, or through the perception of increased risk from the natural hazard. Media reports since 2006 suggests a warming to the idea of relocating to Timmins, Ontario by Kashechewan First Nation over time. From the rejection of the proposal in 2007, a shift has occurred where "community members feel the need to relocate to either higher ground nearby or to Timmins" (Lapierre, 2016).

This may also have been influenced by the government's revised position on relocation, which has evolved on unparallel tracks to that of the community's. Subsequent to commissioning the Alan Pope report, and rejecting the Site 5 relocation proposal, the government agreed to fund the repair of the existing infrastructure at Kashechewan First Nation. However, to date only a portion of the CAD 200 million[22] earmarked for the repair has actually been given to the community[23] (ICI Radio-Canada, 2015, April 23).

Policy Challenges

Given the paternalistic political landscape of former European colonies, like Canada, contemporary challenges faced by Aboriginal communities include: (i) removal from their homes (or land); and, (ii) loss of loved ones, personal possessions and cultural properties. In this regard, the daily life of Aboriginal peoples already embody the challenges experienced by those displaced by environmental events or conflict (Howitt et al., 2012).

When this history of "dispossessing, disempowering, and relocating people" (Howitt et al., 2012, p. 51) is aggravated by a natural hazard—as is the case for Kashechewan First Nation—it creates a political quagmire

[22] Approximately EUR 136 million using the spot rate available on www.xe.com on 08 May 2016.

[23] Only 97 million has been delivered with 50 million put towards emergency evacuations and continual repairs. (CBC News, 2015, March 31).

when striving to develop culturally appropriate adaptation and mitigation strategies.

Reinforcing the Colonial Relationship

Kashechewan faces a disproportionate amount of resources and capacity to manage the severity of their environmental challenges. Although the Reserve has taken appropriate actions to develop an early warning system, they remain dependent on the federal government to fund the expensive evacuations needed to ensure their safety. Moreover, the accrued costs of accommodating the long-term displaced—those whose homes were condemned and who are unable to return to the Reserve—is also out of the community's financial purview.

Flood and displacement risks reinforce the colonial relationship between the Cree and the Crown beyond financial dependence. The disruption to their lives, livelihoods and traditional practices, and the cultural consequences of being removed from their ancestral land, echoes previous political pursuits of assimilating Aboriginal peoples into a broader 'Canadian' culture.

Research on the impact of displacement on other remote, indigenous communities offers strong parallels to the experiences of Kashechewan First Nation. The Kiwirrkurra community was placed by the Australian government in an area that makes them vulnerable to natural disasters. High rainfall induced floods that made homes uninhabitable, and the entire community was evacuated. State intervention in the Kiwirrkurra case "directly exacerbated the existing vulnerabilities of the community, placing at risk their relationships with each other, their most important assets and cultural properties, their sense of identity and the means with which they would ultimately re-establish themselves and their community" (Howitt et al., 2012, p. 55).

Managing environmentally induced displacement in the context of indigenous people is therefore unique from that faced by majority populations due to a risk that "poor policies and practices [...] extend cycles of colonization, marginalization, and alienation and impose ever increasing social, cultural, and human costs" (Howitt et al., 2012, p. 48) on society. The parallels of both cases encompass the fact that state actions do not consider how problematic evacuations can be in this specific historical context.

Perennial Mistrust and Ancestral Lands

Relocating a community that faces annual floods seems to be an obvious solution to recurrent and protracted displacement. However, well-founded,

perennial mistrust by Aboriginal peoples towards the government weighs heavily in relocation strategies as these can be perceived as a means for the state to use natural hazards to reclaim indigenous land. In Canada, this mistrust is rooted in the spillover effects of the numbered treaties like the James Bay Treaty. Developing strategies in partnership with Kashechewan First Nation—involving them at the beginning of the planning process—is therefore critical to developing appropriate, sustainable responses to the annual floods and displacement.

Relocation can also impact culture and community as these "are often rooted in physical places, permanent relocation threatens not only individuals' sense of identity but also communities' ability to organise and cope with difficult circumstances" (Roberts & Andrei, 2015, p. 261).

Another issue with relocation in the context of First Nations relates to self-governance. Indigenous communities are often not fully engaged with at the provincial or federal levels of government to manage issues such as sea level rise—or rising river levels. They also lack the capacity to do so effectively. A large adaptation project like a relocation "will challenge every governance system within the community. From the ability of the First Nation to reach consensus decision of its members regarding the selection of new, appropriate land, to the capacity of the First Nation administration to process the legal, financial and reporting requirements associated with compensation, all systems will be challenged." (Centre for Indigenous Environmental Resources, 2006a, p. 4).

Additionally, indigenous people often face racism by the majority population of their countries. Relocation away from their ancestral lands can often cause them to face "double discrimination as both migrants and as indigenous peoples" (UN, n.d.).

Conclusion

The successive displacements due to flood risks of the Kashechewan First Nation serve as an effective case study when exploring the impact of colonial constructs in the broader context of environment and migration[24]. In many ways, the challenges faced by indigenous people in managing the effects of anthropogenic climate change are a microcosm for the inequalities between the Global North and the Global South in managing these

[24] Although the needs of Aboriginal peoples in Canada should not be amalgamated, the vulnerability to anthropogenic climate change faced by indigenous people—in Canada and worldwide—has many common characteristics.

same challenges—most notably the fact that indigenous people have negligible carbon footprints yet bare a heavier load of the negative impacts of climate change[25].

Climate change is happening at an accelerated pace in polar regions, resulting in its effects being most acute in northern Canada. As Kashechewan First Nation falls within the Mushkegowuk region—geographically classified as boreal and subarctic—it risks experiencing greater floods, amplified protracted displacement and increased difficulties in maintaining their traditional way of life. Outside of the context of flood and displacement, a changing sub-arctic ecosystem will affect traditional harvesting and hunting—reducing access to traditional food sources. As climate change can intensify the already harsh conditions of northern regions, the health and safety of northern indigenous communities are also at risk (Tam et al., 2013).

Moreover, climate change can risk isolating northern communities like Kashechewan First Nation during the cold season. In the James Bay region, an ice road—or winter road—is built connecting the fly-in Northern Reserves to each other. It offers a cheaper means of travel for community members. The warming of the North decreases the length of the time that the ice road can be used, thus decreasing access to these communities. The above makes it evident that a long-term solution is needed.

Through the lens of the Kashechewan First Nation, the consequences of successive displacement can be strongly linked to economic and non-economic loss and damages: loss of livelihoods, disrupted sense of purpose and self-image, identity crises and depression, and loss of physical assets. Responsible and sustainable policy making in the context of environment, migration and indigenous people must therefore put reconciliation at its core—including indigenous knowledge as a pathway for understanding a changing natural environment, taking community-based research and participatory approaches to developing effective adaptation strategies, and aligning with the existing national and international frameworks that protect the rights of indigenous people. By means of example, policy making should be anchored by Article 25 of the United Nations Declaration on the Rights of Indigenous Peoples, which states: "Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used

[25] Due to the location of the areas that Aboriginal peoples inhabit, and the interconnectedness of their temporal and spiritual lives with their natural environment, these communities tend to be the most negatively affected by climate change (UN, n.d.).

lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard" (UNGA, 2007)[26].

The case study is also effective for developing inclusive climate change adaptation and mitigation policies in Ontario. The current responses by the Canadian government to the Kashechewan situation has largely been costly, unsustainable and ineffective. Given the fact that the effects of climate change are most acute in the Canadian north, that three of the longest rivers in the world course through or discharge in Ontario (Environment and Climate Change Canada, 2013), and that it is inhabited by 23.6%[27] (Statistics Canada, 2013) of all First Nations people in Canada, the provincial government will inevitably be confronted with similar situations to that of Kashechewan First Nation. An appropriate way forward, as exemplified by the Kashechewan case, is to prioritize strategies that keep indigenous people connected to their ancestral land, while remaining cognizant of the historical trauma and perennial mistrust associated with the removal from such land—even if in the form of evacuations.

[26] This aligns closely with the call to action point #48 by the Truth and Reconciliation Council of Canada (2015) which states: " We call upon the church parties to the Settlement Agreement, and all other faith groups and interfaith social justice groups in Canada who have not already done so, to formally adopt and comply with the principles, norms, and standards of the United Nations Declaration on the Rights of Indigenous Peoples as a framework for reconciliation."

[27] Based on 2011 data from Statistics Canada.

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