Southern Gulf of St. Lawrence Coalition on Sustainability Traditional Ecological Knowledge Working Group



Sustainable Adaptation Strategies for a Changing Climate: A Follow-up to Climate change adaptation strategies for medicine gatherers in two Migmag communities in New Brunswick



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## Summary

The earth's climate is changing at an accelerated rate. This has led to a warming of the global temperature and various other impacts to the environment. It is expected that this trend will continue, bringing an increase in environmental impacts. As a species, humans will have to adapt if we wish to survive, and indeed thrive in these changing times.

Effective adaptation can depend on the resources available to a particular group. In Atlantic Canada First Nations communities are particularly vulnerable to climate change impacts due to limited access to necessary resources. With oversight from the Traditional Ecological Knowledge working group of the Southern Gulf of St. Lawrence Coalition on Sustainability, Chantal Gagnon partnered with medicine gatherers and community members of two Migmag communities in New Brunswick, Ugpiganjig and Elsipogtog, between 2007 and 2008. During a series of meetings and gatherings, the community members shared their stories, their concerns, and their hopes about how medicine and their communities will adapt to projected and observed climate changes.

As humans, we make use of our land to fulfill our needs and wants. As our climate changes and communities are impacted by the effects, we should begin assessing whether our current land use practices and actions are sustainable. Some communities have begun to look at their land use practices and making small but effective changes. By increasing its adaptive capacity, a community can increase its social, cultural, environmental and economic realms while potentially decreasing the future impacts of climate change.

Increasing the adaptive capacity of a group or community can depend on the resources that are currently available. Based on the discussions with members of the two communities, it seems that conserving medicine could be a viable method to increase the community's adaptive capacity. Two particular adaptation strategies, the Aboriginal Heritage Garden and protection of habitats, were considered viable options by the participating medicine gathers and communities.

The purpose of this second phase of the project was to take the findings from the initial project and present them to community decision makers. The conclusions from the initial project were presented to Ugpiganjig Band Council and Elsipogtog Health and Wellness Committee in March and April 2009 respectively. Representatives from the Southern Gulf of St. Lawrence Coalition on Sustainability presented the findings on behalf of the medicine gathers and community members. The Band Council members and Health and Wellness Committee were welcoming and responsive to the notion of increasing the adaptive capacity of their communities. Discussions that took place after the presentations were insightful, providing both parties with valuable remarks and recommendations. This report is the synopsis of the second phase and draws some new solutions for integrating adaptation strategies to climate changes for traditional medicine and medicine gatherers within a vision of sustainability for the communities.

## 1. Introduction

There have been noticeable changes to the global climate during the past century (Warren et al., 2008). Though difficult to determine the exact impacts it may have on certain areas, there is evidence that climate change is, and will continue to impact communities in Atlantic Canada and around the world. Due to limited territory and a close relationship with the natural environment, First Nations communities of Atlantic Canada are particularly vulnerable (C-CIARN, 2007). Increasing the adaptive capacity of these and other communities can prepare them for changing climatic conditions, and associated impacts, while adding to the health and well being of the community, its members, and the surrounding environment.

## **1.1 Initial Project**

Between July 2007 and March 2008, Chantal Gagnon authored a report entitled, "Climate change adaptation strategies for medicine gatherers of two Migmag communities of New Brunswick". The project was undertaken with the oversight of the Traditional Ecological Knowledge working group of the Southern Gulf of St. Lawrence Coalition on Sustainability (SGSLC), and the participation of medicine gatherers and other community members of Elsipogtog and Ugpiganjig First Nations in New Brunswick.

The purpose of the project was to identify climate change impacts to traditional medicine, medicine gatherers, and their community. The adaptive capacity of the medicine gatherers and their community was discussed through interviews with project participants and included key points such as the local environment, community resources, and social well being. Based on the results of the interviews, two adaptation strategies were identified as having potential to increase the adaptive capacity of medicine gatherers and their communities. More details on the Aboriginal Heritage Garden and protecting habitats are given near the end of this paper (see sections 5.1, 5.2).

## **1.2 Follow-up Project**

As a follow-up to the initial project, Chris McKnight was contracted to research sustainability planning in communities and how the adaptation strategies proposed in the original project could be integrated by community decision makers. Chris also presented the findings of the initial project and his research to members of Ugpiganjig Band Council and members of the Elsipogtog Health and Wellness Committee during two separate meetings in March and April of 2009. Current land use practices were presented, discussed, and debated based on their merits to increase the adaptive capacity of the targeted communities and their traditional medicines and medicine gatherers.

This report briefly describes climate change impacts to Atlantic Canada, highlights four case studies of sustainability initiatives in other communities and reviews some current land-use practices that affect sustainability and climate change adaptive capacity of traditional medicine and traditional medicine gatherers and their communities. Two adaptation strategies, the Aboriginal Heritage Garden and protection of habitats,

identified in the initial report are reviewed, as are the follow-up discussions with the groups from the two participating communities.

## 2. Climate Change Impacts

Changes in climatic conditions will impact regions all over Canada and around the world. For communities to effectively prepare, they must know what to expect. A major impact to coastal areas will be the rise in sea levels. Sea levels are expected to rise anywhere from 9cm to 88 cm by the end of the  $21^{st}$  century (Warren et al., 2008). In addition to flooding concerns, a rise in sea level could increase the impacts of other effects such as coastal erosion, salt water inundation, and species displacement (C-CIARN, 2007).

The average global temperatures of the ocean and air temperatures have increased during the past century (Warren et al., 2008). Temperatures in Canada are expected to increase anywhere from 2 to 5 degrees Celsius over the next century (Bizikova et al., 2008). The impacts are beginning to be felt in coastal communities in New Brunswick. Participants from the original project identified various changes they have noticed over the past years. These include the budding, pollinating, and growing of plants at different times of the year, an increase in the freezing and thawing cycle, making ice travel difficult and potentially dangerous, and the drying of wetlands and marshes. Participants have also noticed a reduction in snow quantity, shorter winters, and water bodies that used to freeze, not completely freezing.

These climatic impacts have far reaching consequences, especially for people such as medicine gatherers who make use of these natural commodities. Changing ecological conditions may force medicines to migrate, making traditional medicine harvesting difficult. To effectively adapt to these changes, communities must begin engaging in a planning process that allows people to enjoy the benefits of their natural environment now, while ensuring adequate resources for future generations.

The community members from Ugpiganjig and Elsipogtog who participated in the original project provided a wealth of knowledge about the impacts to medicine and medicine habitat that may be related to climate change. A few of these observations include the displacement and destruction of species and their habitat, altered growth patterns of some medicine, concerns of medicine contamination, increased storm severity, and increase in heat and warm weather. We refer you to the original report from the project for more details on climate change impacts and the participants' findings. By increasing the adaptive capacity of vulnerable First Nations communities, there is a greater likelihood that traditional medicines, and the associated knowledge, will be more resilient to climate change.

## 3. Sustainable Land Use Practices

The general idea behind sustainability, or sustainable land use, is to meet the needs of the current population without compromising those of future generations.

Traditional medicine conservation techniques practiced by medicine gatherers consist of sustainable elements. For example, the seven generation approach practiced by some aboriginal peoples in their interactions with the land may consider social, cultural, environmental and/or economic aspects of a particular activity (Clarkson et al., 1992). The importance of thinking seven generations ahead ensures medicine gatherers treat medicine and its habitat with respect to ensure its continual use, but in doing so, also leave a healthy and diverse habitat for future generations to use.

As predicted climate change impacts begin affecting our communities, we must take action to ensure our decisions and actions regarding land use do not hinder our efforts to adapt. Through proper land use management there is potential to increase diversity, reduce negative impacts to local environments, and increase the well being of our communities by considering key environmental components such as biodiversity, ecological integrity, and natural capital, in addition to the economic, social, and cultural factors associated with land-use decisions (Department of Environment and Heritage, 2001).

### 3.1 Buildings and Infrastructure

Commercial and residential buildings and infrastructure can enhance the well being of a community but if they are not sustainably developed, valuable ecological units may be harmed or destroyed. By addressing social, economic, environmental and cultural aspects of a development project, decision makers will be better equipped to make informed decisions regarding any potential impacts. If developed properly, infrastructure and buildings can increase the adaptive capacity of community members without compromising the well being of future generations.

#### Case Study 1: Sustainable Community Project – Seabird Island First Nation, BC

Seabird Island First Nation is implementing a "Sustainable Community Demonstration Project" (CHMC, 2004). Integrating community planning and architecture with environmental design, the project seeks to tackle housing issues based on environmental stewardship principles of First Nation teachings.

Sustainable housing for Seabird Island First Nation will require incorporating the impacts of extreme weather events into the design. For community leaders, this may require a revision of construction standards for zoning, planning, and building codes. The Sustainable Community Development Project identified several priorities. Some of the priorities include:

- Efficient Land Use
- Balanced Environmental Carrying Capacity
- Community and Industry Participation
- Recycled Materials (logs, strapping, sills, insulation)
- Edible Landscape, Indigenous Planting
- Spiritual Healing Garden

- Shared Community Facilities, Recycling Depot
- Indigenous Materials (logs, gravel, wood, river rock))
- Cultural and Historic References

By incorporating these priorities into housing designs and the land development associated with this project, Seabird Island First Nation can provide housing that is adapted to climate change impacts and considers the needs of future generations.

#### **3.2 Political Involvement**

Local by-laws can be an effective method for local governments to designate land use in a sustainable manner. By-laws can be effective at controlling activities that take place on community-owned land. For example, implementing restrictions on coastal development could potentially protect traditional medicine habitat, increasing its resiliency to climate change and other impacts. Additionally, by-law restrictions on coastal development can protect infrastructure and buildings from the impacts of coastal erosion, storm surges, flooding, etc. By addressing these potential issues before they take place, communities can reduce the social and financial trouble that may occur if not addressed.

#### Case Study 2: Shoreline Protection - Sept-Iles, QC

The community of Sept-Iles, located along the shores of the Gulf of St. Lawrence, had to address shoreline erosion that was taking as much as 8 m of shoreline per year. The community installed shoreline protective structures (i.e. rock riprap) which led to increased erosional problems further down the shoreline. Local and provincial governments partnered with researchers to study the North Shore Region; a study that lasted from 2000 to 2004. Based on aerial photos, researchers determined that the erosion rate over the past decade was much higher than any other time over a 70 year time span. Most agreed the increase is related to climate change.

To immediately address the eroding shoreline, the community held four public sessions in September of 2004. In the spring of 2005, erosional maps were created to outline risk areas, and to establish guidelines for areas where structures could be built. Finally, the community, and provincial and municipal representatives prepared a coastal intervention plan to address current, short, and long term erosion problems (C-CIARN, 2006).

This illustrates the importance of political action and community involvement to deal effectively and efficiently with climate change impacts. Using resources available through partnerships with governments and research organizations, the community was able to address the eroding shoreline. Through community engagement and planning, decision makers were able to create an action plan that addressed the current issue while considering its long-term viability.

## 4. Increasing Adaptive Capacity

The adaptive capacity of an individual, institution or community is based on a collection of factors including wealth, access to technology, stable and effective institutions, information distribution systems, equitable power distribution, a well functioning social system among others (Smith, 2003). Increasing the adaptive capacity of a group necessitates an increase in some, if not all of these factors. This increase allows the group to adapt to a variety of impacts; including those brought on by a changing climate. Considering these, in relation to sustainable land use practices as a response to climate change impacts, will increase the resiliency of a community and ensure effective adaptation over the long run (Bizikova et al., 2008).

Increasing the adaptive capacity of a community may take more time than other adaptation options (i.e. rock rip rap for shoreline erosion). To increase its adaptive capacity, it is important for a community to act in a sustainable manner. A climate change adaptation strategy may increase the adaptive capacity of a group, but if it is not sustainable, its impacts to future generations may be worse. Land use practices should proceed in a sustainable manner to ensure social, environmental, cultural, and economic factors are considered. If sustainability is factored into land use practices, communities can address pressing issues while increasing their adaptive capacity.

### 4.1 Medicine Conservation

Conserving traditional medicines can increase the adaptive capacity of medicine gatherers and their communities while increasing the resiliency of the medicine to climate change impacts. Medicine gatherers and elders can share their knowledge with youth and other interested community members. Sharing traditional medicinal knowledge can be a positive experience that can improve their relationship with their culture and with the medicine gatherers. This increase in respect for the knowledge of their elders, and the powers of traditional medicine, can lead to other benefits such as an increase in the social well being of the community.

Conserving medicine will also require cooperation within the community and with other communities to ensure designated medicinal areas are established in different ecological habitats (Gagnon et al., 2008). Through cooperation and sharing, relocating medicine can be a sustainable adaptation strategy that can contribute to the adaptive capacity of medicine gatherers and their communities.

#### Case Study 3: Emergency Preparedness – Seabird Island First Nation, BC

Seabird Island First Nation in British Columbia is facing the risk of flooding due to increasingly erratic weather events. In an attempt to adapt, the community has begun educating on emergency preparedness techniques. Education material includes a series of six pamphlets which have been made available online. Also, the Seabird Fire Department has been tasked with distributing the emergency preparedness information to community members (CIER, 2008).

This example illustrates how education can increase the adaptive capacity of a community. Providing community members with emergency preparedness information



increases the resiliency in the event of a flood or other erratic weather event. Using existing community resources such as the local fire department is an effective method to disseminate information. Having an effective method to distribute information allows the community to increase its adaptive capacity.

## 4.2 Community Engagement

By engaging community members, local governments are able to make land use decisions that consider social, cultural, environmental and economic needs. Effective engagement requires an informed citizenry. With current and relevant climate change and sustainable land-use information and support from political entities, community members are better able to mobilize and/or acquire necessary resources. Also, if community leaders are actively engaged in pursuing meaningful adaptation initiatives, there is a greater chance that community members will get involved.

Having local governments engaging the people who interact with the natural environment in and around a community can give them an important perspective on the vulnerabilities and values associated with particular areas. Utilizing this information can lead to sustainable land use practices and effective adaptation strategies. Appointing an individual or organization as a "Champion" (Forbes, 2008) can be useful in moving an adaptation agenda forward.

### Case Study 4: Comprehensive Community Planning – Listuguj First Nation, QC

Listuguj First Nation has undertaken a comprehensive community plan in collaboration with Gespe'gewaq Mi'gmaq Resource Council (Gespe'gewaq, 2009, Gagnon et al., 2008). In the process, decision makers focus on cultural, social, economic, and environmental sustainability when planning for the future of the community. A key feature to the comprehensive community plan is public participation. This can create interest and awareness of the potential of climate change impacts and adaptation strategies available to communities. Active participation by a diverse number of community members will create a plan that considers all aspects. To create a sustainable community plan, it is important to have all members of the community involved, particularly those who show less interest (Moir, 2009).

## 4.3 Engaging Youth

Participants from the original project noted the importance of encouraging youth to learn about, and participate in medicine gathering. By engaging youth and providing them with knowledge of medicines, their habitats, traditions and practices they could develop a greater appreciation for medicine and medicine gatherers, their culture and of their self. If younger generations were taught collection methods and medicinal uses, their knowledge and interest in the spiritual and cultural aspects of traditional medicines could be nurtured. Increasing the knowledge and understanding among youth can lead to increased social cohesion, wealth, and other benefits. Encouraging youth to participate in solutions now may allow them to be better prepared, and perhaps more willing, to provide solutions in the future.

## 5. Proposed Adaptation Strategies

During the initial project, the medicine gatherers and community members identified two adaptation strategies that they felt could increase the adaptive capacity of their community. Each adaptation strategy has elements that may be suited more to one community than another. While there are differences, some of the resources necessary for successful implementation are similar. Political and community involvement, effective information gathering and communication, and funding are just a few examples. The two adaptation strategies outlined offer a potentially sustainable option to increasing the adaptive capacity of the participant medicine gatherers and their communities. They may or may not work for other communities. They are after all just two of many possible strategies.

## 5.1 Aboriginal Heritage Garden (AHG)

The AHG has potential to increase the adaptive capacity for Ugpiganjig, where it is situated, and neighboring communities. Increasing the awareness and understanding of aboriginal heritage and culture can bring about stronger social institutions and greater social cohesion. Through greater education and awareness, people are able to make decisions that consider what benefits the community as a whole. Providing youth and other interested people with information of their culture and traditions may increase their appreciation and respect for their elders and medicine gatherers.

By increasing the economic diversity within the area, the AHG can increase the wealth within the community. An increase in wealth leads to greater social stability, which allows a community to better adapt and have greater capacity to address issues such as climate change impacts.

The AHG has potential to provide an alternative habitat for plants displaced by the drying or flooding of habitat, invasive species, contamination, etc. By providing a healthy and diverse location for medicine, community members will be able to access clean healthy medicines now and into the future. Having an easily accessible habitat will also encourage medicine gatherers to gather on the lands adjacent the AHG. Having medicine gatherers use the area could provide interested individuals with the opportunity to learn the gathering techniques and various uses of medicines. As people's knowledge, respect and spirituality associated with medicines and their habitat increase, so can their adaptive capacity. By having a population who are knowledgeable of medicines and the associated practices, there is a greater likelihood that they will be passed to future generations.

The adaptation potential of the AHG will depend, among other factors, on how it is operated. Operating the AHG in a manner that focuses on respect for medicine and its habitat and the spirituality and traditions associated with medicine gathering will answer the challenges faced by the medicine and medicine gatherers today and in the future. Elders can share their knowledge and spirituality of aboriginal customs and traditions to guide operational decisions.

### 5.2 Protection of Habitat

Protecting medicine habitat may be an effective adaptation tool if sustainable land use practices can be established. This increase in protected habitat has the potential to lead to many benefits to medicine gatherers and their communities, including an increase in adaptive capacity. Some of the participants from the initial project expressed interest in the idea of protecting medicine habitat. Medicine gatherers believed that with the support and resources, they could educate their community about the benefits of medicine and of healthy and productive habitat.

Ensuring habitats are maintained is an important step in protecting habitat. Preventing water contamination increases the resiliency of medicine and decreases the likelihood that medicines are contaminated or will not be effective. A collection of diverse medicine habitats allows for movement of medicines, but ensures that there is available habitat that may still be accessible to medicine gatherers and others who are wiling to learn about them. If there are several protected areas there is a greater potential for medicine to adapt to climate change impacts. This requires cooperation from within a community and amongst other communities. Having a large social network of interested individuals provides for a greater number of areas that may be used as suitable medicine habitat. Some studies have suggested that the best adaptation strategy may be to leave certain areas undeveloped (Daigle, 2006).

With factors such as age and laws (i.e. Species at Risk Act) impeding access to medicine habitat, there is a greater need for youth, and the general community, to get involved with protecting medicine. Support from local and other levels of government are needed to protect the rights of medicine gatherers.

Having interested youth and younger community members involved in medicine gathering increases the capacity of medicine gatherers to adapt to climate change impacts. As medicine gatherers age and find difficulties adapting to increased frequency and severity of storms and unreliable ice conditions that may make travel dangerous, it would be beneficial for younger generations to lend the strength of their youth in exchange for the knowledge of their elders.

While the two aforementioned adaptation strategies have potential to increase the adaptive capacity of medicine gatherers and their communities, they cannot address all factors. The initial project suggested the benefit of using the two adaptation strategies in conjunction with each other. While each has unique qualities, if used together or with other adaptation strategies, there is greater potential for successful adaptation and increased adaptive capacity.

## 6. Meetings and Discussions

It is important that people dealing with community issues be educated about climate change, its impacts, and adaptation strategies (McKenzie, 2009). Educating community decision makers about potential climate change impacts and adaptation strategies can lead to an increase in the adaptive capacity of the community.

Implementing adaptation strategies now can potentially decrease future costs and damage to the community members, infrastructure, and the environment.

Support from all political institutions was the primary adaptation need that was identified by participants of the initial report. This sentiment was echoed in the C-CIARN Atlantic State of Play Report 2006-2007, "Government decision- and policy-makers, whether they are provincial, municipal, or Aboriginal, are among the most important stakeholders associated with climate change impacts and adaptation" (C-CIARN, 2007, p.11).

The initial project proposed a follow-up presentation and meeting with the decision makers of the two participating communities. Participants of the initial project believed a presentation and meeting would be a positive step in taking the project to the next level. These meetings were to bring forth the findings of the initial project and to discuss the benefits of considering traditional medicine conservation into sustainable land use practices.

### 6.1 Ugpiganjig

Early on in this project we were able to have several discussions via telephone with various members of the Ugpiganjig Band Council or administrative staff. Our representative from that community, who was involved in the previous project, was able to help us establish communication with these individuals.

We learned from a telephone conversation with one councilor on January 6, 2009 that several projects were underway related to current land use practices within the community.

• The Aboriginal Heritage Gardens has suffered many setbacks since its original creation, and at the time of writing this report is still not open. However, the community and surrounding areas consider that once open it will have great potential for medicine protection and traditional knowledge teaching.

• The community will finally see after over a decade of petitions and negotiation the partial removal of the Eel River dam, which is seen as one of the causes for the environmental pollution of the Eel River.

• A Shoreline Erosion study is also underway in partnership with Gespe'gewaq Mi'gmaq Resource Council (GMRC).

• The Aboriginal Aquatic Resource Ocean Management (AAROM) program is an ongoing partnership with Fisheries and Oceans Canada which is looking at sustainability and cooperation in fisheries.

Due to miscommunication and hectic winter schedules, no visit to the community was possible prior to the meeting with the Chief and Band Council. A premeeting visit could have provided a better understanding of the land use practices that are being undertaken by the community. However, the results of the meeting indicate

that even without this pre-meeting visit, the information we provided at the meeting was in line with both existing research but also the realities of the community.

On March 23, we were given the opportunity to present the findings of the initial and follow-up projects to the Ugpiganjig Chief and several members of the Band Council. The presentation outlined climate change impacts to Atlantic Canada and the outcomes of the initial report. The focus was then placed on the adaptation strategies in relation to land-use practices that may increase the adaptive capacity while ensuring the sustainability of traditional medicine, medicine gatherers, and their community. The author of the original project, Chantal Gagnon, was present during the presentation to provide insight into any specific project details.

The discussion which followed after the presentation was seen as beneficial to the presenter and council members. The presentation stimulated the recollection of observations from councilors regarding changes to the land and climate over their own lifetime. For example, they mentioned that when they were young they could drive motor vehicles on the frozen Bay de Chaleur in the winter, which is no longer the case.

Councilors noted that there had been no attempts by local medicine gatherers, or elders, to approach them to discuss their concerns about the impacts of climate change, or land-use practices, to traditional medicine and its habitat. This could be linked to the small number of medicine gatherers within Ugpiganjig.

A councilor pointedly mentioned that we (them and us) were fifteen years late on paying attention to the knowledge and place of their elders in relation to sustainable land use practices, traditional medicine and climate change adaptation. Apparently, many of their elders passed away in the last fifteen years, and very few folks with traditional knowledge are left in the community.

One councilor mentioned the reluctance of some medicine gatherers to share their knowledge, which is problematic if the medicine gatherer dies before passing on knowledge to the younger generation. This was noted as a very significant loss, especially at the time when exposure to European diseases had killed whole families in a very short period of time. This would have prevented knowledge which was safeguarded by only family from being present today for use in adapting to climate change.

This led to discussion of the possibility of working with other First Nations communities to pass on the knowledge that is currently held by some to interested First Nations youth. The initial project identified the willingness of youth from Ugpiganjig to learn traditional medicine gathering techniques. The councilors expressed interest in creating links with other First Nations communities and organizations on land-use issues and climate change adaptation. They noted the upcoming cooperative project between GMRC and Ugpiganjig to address shoreline erosion.

Finally, the councilors expressed interest of working with community knowledge holders to protect traditional medicines. However, they identified obstacles to this including the small number of folks with traditional knowledge in the community, the lack of awareness of a need for immediate action on climate change, the overarching need for housing and clean water, and the incapacity of the community to affect land-use practices outside its lands.

The Chief and councilors thanked us for bringing this project and information to their attention and invited us to stay in contact with them. We offered them extra information on resources related to the subjects discussed and offered our continued support on their efforts for sustainability and climate change adaptation.

### 6.2 Elsipogtog

Establishing a meeting date with Elsipogtog Chief and Council proved difficult given conflicting schedules, miscommunication and community affairs. Eventually, through previous contacts in the community, we were able to have a space on the agenda for the April 2, 2009, meeting of the Elsipogtog Health and Wellness committee. This gave us the opportunity to tap into the social and well being components in the initial project's findings and the social aspects of climate change adaptation and sustainability.

The information was presented via slide handouts as time constraints prevented a formal presentation. Members of the Health and Wellness Committee asked questions throughout the presentation, and Chantal Gagnon provided clarification to questions about the initial project.

In an attempt to keep the presentation relevant to the committee, emphasis was placed on the importance of increasing adaptive capacity as a means to adapt to impacts associated with climate change. The point of the discussion was to stress the importance of the Health and Wellness Centre as a means to achieve increased capacity. Having the opportunity sit-in through the first part of their weekly meeting, to we discovered that the committee is working to implement programs to introduce outdoor activities to the community's youth through outdoor expeditions, and experiential learning. These initiatives show that even without focusing specifically on climate change adaptation such programs could introduce youth to traditional medicines in their habitats as a means to understand and appreciate the spiritual and cultural aspects of medicine, its habitats, and medicine gathering.

We also presented an idea from an Elsipogtog participant from the initial project about planting a garden that would include medicinal plants on the property of the Health and Wellness center. Members of the committee informed us that they are already in the planning phases of building a garden for students to plant and maintain. They noted how it could be beneficial to include traditional medicines in the garden and sharing the knowledge related to those medicines to the youth. This was inspiring as the meeting and discussions demonstrated that Elsipogtog is advancing on many projects that have components that bring healing to the spirit, body, mind and heart of their community members, but also contributes to building community adaptive capacity through spiritual, cultural, and physical contact with their natural environment and their traditional practices.

Questions were raised about whether or not there was more the committee could do, as they believed that their current programs are, in fact, increasing the adaptive capacity of the community. While the programs were aimed at increasing the well being of the community, we stressed the importance for organizations such as the Health and Wellness Centre, or its representatives, to engage their local government to ensure its policies and practices are consistent with the values and beliefs of the Health and

Wellness committee. We took the opportunity to point out the importance of increasing adaptive capacity of medicine gatherers. Doing so increases their resources and support, making it more likely that they will be able to pass knowledge of traditional medicines onto younger generations. We did support and encourage the members' interest around the potential of the Aboriginal Heritage Garden to strengthen knowledge of aboriginal culture and spirituality between the two communities. They were also interested about the possibility of sharing knowledge between First Nations communities, and remarked that some cooperation and sharing is already occurring in neighboring communities.

At the end of the presentation, and after discussions had subsided, the chair of the meeting suggested further discussion of the issue at the next meeting. This was encouraging as it shows a willingness of the committee to further discuss the merits of pursuing attempts to work with other First Nations groups, or engage their local government to increase the adaptive capacity of medicine gatherers and their community. Whether the discussion blossoms into fruitful dialogue, or is dismissed at the next meeting, the opportunity to interact with the committee members allowed us to get them thinking about climate change impacts and the importance of increasing adaptive capacity to successfully adapt to climate change, even for those working on the social wellbeing of their community.

We are satisfied that we were able to accomplish the goal of bringing the concerns of the participants from the initial project to their decision makers in Ugpiganjig and Elsipogtog.

## 7. Moving Forward

Without having an aboriginal background, it was a challenge to ensure the outcomes from the initial project were being presented in a just manner. Without having the luxury of time, or the benefit of learning about the knowledge, traditions, and spirituality associated with medicine and medicine gathering, the emphasis of this report is based on earlier reports and interviews with concerned First Nations community members and medicine gatherers, and from related published material from various First Nations and non-First Nations organizations.

The hope was to bring ideas and discussion that would have the Chiefs, band councilors and/or the Health and Wellness committee members thinking about this important issue. The opportunity to speak with these two groups provided them and us with information and ideas that will allow continued growth in the region of building adaptive capacity to climate change in a sustainable manner in these and other communities. With continual cooperation and collaboration amongst community members and local governments, interested community groups and organizations, the potential for capacity building can only increase.

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