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Overview

On November 19-21, 2019, in Kuujjuaq, was held the first workshop on climate change in Nunavik. The workshop, organized by Makivik Corporation (Makivik) in collaboration with the Kativik Regional Government (KRG) and the Nunavik Regional Board of Health and Social Services (NRBHSS) was successful in bringing together community members, representatives from regional organizations, provincial and federal governments and researchers.

The objectives of the workshop were the following:

- Exchange experiences, knowledge and observations on the various impacts of climate change on our land, food security, health and way of life;
- Discuss priorities and actions regarding adaptation solutions that would ensure the well-being, prosperity and resilience of our communities;
- Identify any gaps, opportunities and concerns in relation to research on these matters.

To achieve these objectives, the workshop included presentations from researchers, organizations and community members on climate change impacts and on research, monitoring and adaptation projects going on in Nunavik. The knowledge shared during these presentations helped inform discussions during the workshop.

Participants then engaged in small group discussions to discuss different questions related to climate change impacts and explore possible solutions.

The questions asked to the participants during the three-day workshop were the following:

Day 1 - Climate change impacts

- 1- How does climate change affect our life as Inuit today?
- 2- In your opinion, do you think climate change impacts youth, women, men and elders differently? If yes, in what ways?
- 3- What would you say is the greatest negative impact of climate change in your community?

4- What would you say is the greatest positive impact of climate change in your community?

5- What challenges are you facing in terms of security and safety in a changing climate?

6- How would you say climate change affects your mental and physical health?

7- What would you need to better document and communicate the changes in the environment?

Day 2 - Adaptation solutions

- What are your ideas for potential adaptation solutions to the problematic related to these themes?
 - 1- Safety on the land
 - 2- Safety on the ice
 - 3- Harvesting in general
 - 4- Infrastructure: housing, building, road, airstrip, etc.
 - 5- Natural hazard and unpredictable weather conditions
 - 6- Animal and vegetation changes: disease, new species, food safety ...
- What are you missing to implement these adaptations (training, equipment, human resources, material, other ...)?

Day 3 - Climate change and food security

- 1- How would you like to work with researchers on food security and climate change?
- 2- How would you like to see the Inuit experience of Climate Change captured in the Inuit Health Survey questionnaire?
- 3- Which questions would you like to include in the Inuit Health Survey regarding food security and climate change?

Note that most of the topics are interconnected; therefore, similar information was sometimes shared in response to different questions. This report is not structured around these questions, but the reader should keep in mind that they helped orient the discussions during the workshop.

Finally, since the workshop gathered participants with a wide range of experiences and knowledge, time was dedicated to testimonials and group exchanges outside the frame of question-oriented discussions to cover the vast subject that is climate change.

Summary

The conversations held during the three-day workshop underscored that climate change is connected to diverse culture, environmental, social, health and economic issues which can be experienced differently between people and communities, but from which we can identify some similarities. Many valuable observations of the changing environment were shared during the workshop: from wildlife and vegetation, to ice conditions and changing weather and landscapes. Together, these changes impact the daily lives of Inuit in Nunavik.

Safety on the land was a major issue discussed during the workshop. Changes in the ice conditions and landscape, combined with more unpredictable weather, increases the risks related to travel on the land. The health, distribution patterns and migrations of wildlife were also extensively discussed and identified as being significantly impacted by the changing climate. Moreover, there are now new wildlife species moving up to Nunavik which raises concerns about potential disruptions to the food chain and ecosystems. Increased risks related to harvesting activities combined with changes in wildlife are significant factors reducing access to country food and therefore affecting food security in Nunavik.

Participants envisioned climate change adaptation as a way to protect the environment and maintain the Inuit culture by ensuring safe access to the land and the transmission of traditional knowledge and skills. They highlighted the importance of supporting Nunavik communities and building their capacity to promote community-led research and actions suited to their specific contexts and needs.

Observations Related to Climate Change

As expressed by participants during the workshop, the profound knowledge of their land is the reason why Nunavik Inuit have survived and thrived in their homeland for millennia. This knowledge came mainly by observing their environment, the wildlife inhabiting it and the weather in order to travel safely on the land. However, the climate is changing and so is the environment in Nunavik.

Inuit are therefore in the best position to document these changes. Environmental changes can be direct or indirect, positive or adverse. The participants shared their observations on various topics on what they considered to be changes related to climate change.

Ice

One of the major changes discussed between participants was the lake, river and sea ice that is now thinner than it used to be. The ice forms later in the fall and breaks up earlier in the spring resulting in more open water. The ice is also rougher now due to the weather conditions. These observations seem to be consistent throughout Nunavik.

Land

The thawing of permafrost was also reported by the participants. They noticed that trails have changed because the land is getting softer due to melting permafrost. Participants observed more movement in the land. Some mentioned sinkholes, landslides and erosion in some places bringing more sediments into rivers. The water levels also seem to be changing in some rivers and lakes.

Vegetation

The growing season is longer in Nunavik now, and participants mentioned that consequently, the land is now greener. In some communities there are more berries and they have gotten bigger, whereas other communities have fewer berries than they used to. Participants also mentioned that plants and trees are now getting taller and more abundant. There are now trees and shrubs in places where they were normally absent, and it changes the landscape. There are also new species of vegetation that they do not know and that was not there before.

Wildlife

Changes in wildlife were extensively discussed during the workshop. As is the case for vegetation, it appears that the biodiversity of wildlife has increased. Sightings of new wildlife species are more frequent. This is particularly noticeable for beavers, black bears

and killer whales but there are also new bird species, fish and insects occurring in Nunavik.

The participants also mentioned changes in the migration and distribution patterns of various marine and terrestrial species, as well as birds and fish. The timing of migration has also changed for some species such as belugas and walrus. Polar bears are now coming onto the lands earlier and are also coming into towns more frequently than in the past.

Participants also mentioned that some species seems to be more abundant than before. This is true for species such as urchins, scallops, belugas and polar bears while others like caribou, some fish populations and insects (such as black flies) seem to be less abundant.

According to participants, sightings of sick animals or with scars or parasites are more common now. The same thing is observed for fish which are said to be more often deformed, sick or with parasites.

Weather

Participants agreed that the weather is getting more unpredictable in the region. There are also more extreme weather events such as storms, blizzards and the winds appear to change direction a lot more than before.

Changes in the amount and timing of precipitation were also mentioned during the workshop. There is now more rain in the summer and fall resulting in more humidity, but there is less snow precipitations in the winter. The snow is also said to be different, softer and more humid compared to what it used to be.

Conclusion

Over the course of the workshop, participants shared both historical and current environmental observations. They highlighted the large number of environmental changes occurring in the region. These observations show the vast knowledge and expertise Inuit have of their environment.

However, the limited time of the workshop made it impossible to go into each community-specific observation and this report cannot express the complexity and richness of the local knowledge possessed by Nunavik Inuit. The observations listed in this section are just an overview of the climate-induced changes occurring in the region. The scope and intensity of these observations can therefore be different from one community to another.

Impacts of Climate Change

The participants' knowledge and observations were often reported in the form of cause-and-effect chain that linked the changes in the environment to impacts on their life, as individuals or as communities. The Inuit culture is so closely tied to their land and environment that the environmental changes impacts their daily lives.

Culture and Learning

One of the main concerns expressed during the workshop was the impact of climate change on Inuit culture and the retention of traditional skills and knowledge. The participants shared that traditionally, there was a time to do things in an orderly way but because of climate change, the practices have changed. They expressed that the time to pass along knowledge from elders to youth is harder with the pace of change. The changes in the environment lead to changes in traditional practices such as travel, weather prediction and harvesting. It is therefore more challenging to teach youth about traditional skills and knowledge. The limited opportunities to pass on knowledge to youth caused participants to be concerned about the loss of expertise related to their land and traditional skills, which could lead to the loss of their culture.

Harvesting and food security

The changes observed in wildlife health, distribution patterns and migrations combined with reduced access to the land because of changes in ice conditions and the landscape were identified by participants as having negative impacts on harvesting in Nunavik.

Participants agreed on the fact that it is becoming more and more dangerous to travel on the land. This is in part due to the weather that is now harder to predict, to changing winds and to more sudden changes in weather patterns, but also because of the later fall freeze-up, earlier spring break-up and thinner and rougher ice condition in the winter. Travelling on sea ice, lakes and rivers is therefore more dangerous and now possible for a shorter period during the year. Access to the territory is also impacted by climate change in the summer as the growing vegetation makes it harder to make trails and the changes in landmarks increases the risk of getting lost during harvesting activities. These increased risks lead to more incidents and accidents during harvesting activities.

The participants also highlighted that some animals are now more difficult to harvest and that they need to travel more and go further from communities for hunting and fishing activities. They also expressed the concern that the new species might disrupt the food chain. One example discussed during the workshop is the beavers that are believed to limit the migration of fish in rivers where they have built dams.

Furthermore, it was said that harvesters rely more on technologies, such as snowmobiles and *GPS*, to practice their traditional activities and that these technologies increase their

cost of living. This adds to the fact that, with harvesting becoming more difficult, they need to rely more on store-bought food which is expensive and may not be as healthy as country food.

During the workshop, there was a common understanding that climate change is directly linked to food security. The challenges faced by Nunavimmiut to practice harvesting activities combine to the high cost of living contribute to food insecurity in the region.

Health and Well-being

During the workshop, participants repeatedly raised their concerns about the impact climate change might have on their health. The increased amount of diseases, deformities, parasites and potential contaminants found in wildlife was a source of concerns as well as the water quality, and the possible damages the sun might cause to their skin.

Some participants also mentioned that they are more worried about youth now because they considered that they are not prepared or knowledgeable enough to travel and harvest safely on the land which raised the level of stress for community members.

Infrastructure

The participants extensively discussed the impacts that permafrost thawing have on community infrastructure and dwellings. The main concern expressed during the workshop was the presence of mold in the homes caused by water infiltration in the cracks and the possible impacts that might have on the health of the people living in those houses.

Participants also expressed concerns about the impacts that extreme weather events might have on the Medevac activities. They were worried that the airport infrastructure might not be adapted for these kinds of weather events.

Conclusion

Generally speaking, participants agreed that climate change has more negative than positive impacts on their lives. With some exceptions, such as longer construction, sealift and on-water hunting and fishing seasons, they thought that climate change affects their way of life negatively.

At this point in time, it is hard to identify the full range of impacts related to climate change as everything is so interconnected and the observed changes varied in time and space. However, participants agreed that there is a need to find solutions to reduce the negative impacts that climate change has on their culture and daily lives and to adapt to their changing environment.

Adaptations and Possible Solutions

Talking about adaptation to climate change was less obvious for participants because, as they highlighted during the second day of the workshop, adaptation to their environment is something they have always done in order to survive in Nunavik. The recognition of a practice or an activity as being an adaptation solution was not always clear. However, there was a common understanding between participants that they are ready to take actions to adapt to climate change.

Ongoing Adaptation Solutions

The participants shared a variety of actions that they are taking to adapt to their changing environment. Most of these actions were taken on an individual or a family level.

For example, harvesters mentioned that they are now bringing more equipment to be safe while travelling on the ice or on the land because of the unpredictable weather. They are also sharing their plans with relatives in case they might have difficulties during their trip. They are also changing the travelling routes to avoid places that are not safe anymore.

There are also adaptation projects conducted in some communities to reduce the negative impacts of climate change on aquatic ecosystems such as stream enhancements to mitigate the impacts of low water level or projects related to the control of beaver populations to facilitate Arctic char migration.

Potential adaptation solutions

With changing and more unpredictable weather conditions, the participants expressed the need to have more information on the weather and travel conditions. They also proposed to do more monitoring such as ice monitoring to better document the changes occurring with climate change and to propose adequate adaptation solutions.

The need for more capacity building for Nunavik Inuit was mentioned many times throughout the workshop and it is seen as a solution to adapt to climate change. Promoting spaces and opportunities for elders and youth to gather for the transmission of traditional skills and knowledge or to offer more training on different matters related to climate change adaptation (search and rescue, survival on the land, *etc.*) was deemed necessary.

The participants also raised the fact that there is a lot of administration work that needs to be done to develop and implement projects related to climate change adaptation. It can be either to access funding or to get authorizations or licences when needed. The documents are usually in French or English and most of the time, it is administratively cumbersome for community members and organizations. There is a need to support

communities by providing Inuktitut documents and to build their capacities to undertake such work.

The lack of communications in Inuktitut was a major issue brought by the participants. They want to have access to informative documents (for example on new vegetation, wildlife species, *etc*), research results and government documents and forms in Inuktitut to make it accessible for every Nunavimmiut.

Research Gaps and Priorities

Research gaps and priorities related to climate change and food security was the focus of the third day of the workshop. These topics were of great interest for the participants and they had much to share on the matter. From these discussions, it was clear that food security and access to country food is of utmost importance for Nunavimmiut.

Although there are many research projects related to climate change and food security in the region, the participants expressed the need to have more Inuit-led research and not only academic research. To conduct such research projects, they mentioned the need to have more financial and technical support. It was also highlighted that the Nunavik Research Center is one of the region's strengths and it needs to be supported and promoted so they can lead the research in Nunavik.

There is still a lot of research projects that are done without the complete support and collaboration of communities and without considering the priorities and knowledge of Nunavik Inuit. Moreover, the results are not always shared with communities afterward. The participants have expressed their will to be in control of the research done on their land.

As for research gaps and priorities, they varied amongst participants and communities, but many were interested in having more research done on rivers since there are concerns about fish distribution and migration. There were also considerable interests to develop environmental monitoring projects to better document their observations. Some participants mentioned the need to better link country food access to food security in research and conduct community-based and community-led research projects. They also stressed the importance of having local data on food security to be able to take action locally.

Next Steps

This workshop was the first Inuit-led attempt to assess the wide range of impacts related to climate change and to start discussing possible solutions to address them. The participants clearly expressed their desire to see benefits coming from this workshop.

In the coming year, Makivik, in collaboration with the regional organizations, will work with communities to develop a climate change adaptation strategy for the Nunavik. The objectives of this strategy are to develop a shared vision and identify priorities for Nunavik but also to increase collaborations and to promote the inclusion of climate change in the various decision-making processes.

Community consultations will take place in the summer of 2020 and will be a good opportunity to go further in the discussions about priorities and adaptation solutions.

In the meantime, if communities or regional organizations would like to start a climate change adaptation, monitoring project or food security initiative, they are invited to contact either Makivik, KRG or the NRBHSS for support (see Appendix A).

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