### **PRIORITIES IN THE CONTEXT OF CLIMATE CHANGE**

# 3. HEALTH, QUALITY OF LIFE, HOUSING AND TECHNOLOGIES

Despite the recognition of Cree rights, and the James Bay and Northern Quebec Agreement, Cree communities are still facing many issues that could adversely affect their development. Many Cree people believe that their quality of life remains vulnerable to climate change and have reflected on ways to improve the situation. Climate change provides a new incentive to implement adequate responses to current issues, and to increase communities' resilience to environmental hazards. They have designed specific responses related to the three following themes: ensuring water and food quality, improving housing quality and implementing green technologies.

#### 3.1. Ensuring water and food quality

Fresh water quality remains a preoccupation among many Cree people, especially when they leave to go hunting. The Cree Nation Government's department of Capital Works & Services ensure that the drinking water operators are trained and certified. However, this is limited to the control of the quality of the drinking water being distributed through the community networks. A systematic water surveillance system with regular reports on water quality could be implemented to inform the community members when the test results are both positive and negative. This could reduce the impression that there are issues with the water and build trust in the water surveillance system.

Water quality is not being monitored by official drinking water operators outside of the communities' piped networks (i.e. lakes, streams, etc.). However, the communities do have the equipment and knowledge to do so if they want to. In the context of changing environmental conditions, such as more seasonal variations in rainfall, it appears important to improve community-based capacity for monitoring water quality. The Cree Health Board and research teams could provide support in testing for contaminants.

Wild food consumption does raise some health-related issues. The decrease in quality of game meat due to rising temperatures in the summer is becoming an ever-growing concern. Moreover, as new species come into the territory, exposure to zoonosis represents an important threat for people's health. More awareness campaigns could take place to minimize potential risks. Game meat samples are analysed for the Cree Health Board Traditional Food Program, which offers traditional food to patients and clientele. Through this program, many hunters are trained to assess the quality of the meat. However, analysis is done in labs for bacterial contamination. In addition to this program, it was suggested that the Cree Trappers' Association and tallymen could be trained to assess the quality of the meat in order to reduce and control the risk of disease and poor-quality meat.

Some believe health issues are directly associated with the loss of cultural activities that involve traditional diet and lifestyle. The concern regarding food quality is as much about access to nutritious food, as it is about cooking knowledge and consumptions habits. The question of diet involves many stakeholders located at different administrative levels, local, regional and provincial. Many participants reiterated that a healthy diet depends on food literacy, and lessons in traditional cooking and plant identification are of the utmost importance. A more original proposition consists in designing programs that could be co-taught by elders and nutritionists.

It has been suggested that given the new weather conditions, it may be possible to practice more agriculture. The development of local food production activities in Eeyou Istchee could increase the supply of fresh and nutritious food, while it may also nurture the relationship with the land and help promote wild food and biodiversity conservation. Small scale farming could improve self-sufficiency, which could become necessary if transport of food supplies are disrupted by extreme weather events. However, some participants noted that certain agricultural experiences have not been pursued due to lack of expertise in this sector and the scale of projects, which require a strong commitment and invested time. Capacity could be built locally to make some of these agricultural projects achievable. Furthermore, the possibility that large-scale agriculture may develop in some communities raise concern for water sources. In the eventuality of such projects, measures should be put in place to protect surface and subsurface water.

Priorities	Actions
Ensure water quality	<ul> <li>Improve capacity and raise awareness on water quality monitoring at community and regional scale</li> <li>Develop expertise for water monitoring by training additional technicians in all communities</li> <li>Increase accessibility of water quality testing equipment to community members</li> </ul>
Improve education and training on cooking and healthy diets	<ul> <li>Provide access to traditional cooking for the youth</li> <li>Involve elders and nutritionists in the teaching of cooking and healthy diets</li> </ul>
Provide access to game meat quality testing	<ul> <li>Set up local game meat sampling systems to perform tests</li> <li>Raise awareness about risks related to zoonosis for people in contact with game and raw meat</li> </ul>
Production and harvest of local food	<ul> <li>Promote the harvest of local plants and berries</li> <li>Ensure proper planning of agricultural activities as to not to disrupt other activities</li> <li>Set up community gardens</li> </ul>

Table 6. Summary of priorities and actions to ensure water and food quality

# 3.2. Improving housing quality

Quality of housing and overcrowding in houses were raised as concerns during the Forum. Though not directly related to climate change, the concerns raised about housing can be problematic and can increase vulnerability to extreme weather events such as floods. The provision of standard size houses often does not match family needs and fails to accommodate larger families. Moreover, the local governments have limited financial and technical resources to provide timely renovations and repairs to the deteriorating social housing units. Changing weather patterns increase the risk of sudden thaw. Widespread basement flooding has been the result of rapid thaw and poor drainage. Participants suggested that regular inspections and house maintenance services should be scheduled to ensure proper housing maintenance and repair. In addition, land planning of housing development should better integrate hydrological data about floodplains, groundwater and flood risks.

For construction, the minimum standards that must be followed are the Provincial and Federal Construction and buildings codes. In addition to these codes, the Cree Nation Government has developed construction standards and guidelines that are adapted to Eeyou Istchee. The guidelines developed by the Cree Nation Government department of Capital Works and Services are recommended for consideration in future construction but are optional. Future construction in the communities should pay close attention to the sections of these guidelines that will improve climate resilience of infrastructure, notably regarding landscaping, thermal resistance and precipitation.

Priorities	Actions
Improve housing quality	<ul> <li>Design houses for community groups with different family sizes, ages, and needs</li> <li>Monitor air quality in houses</li> </ul>
Improve housing construction techniques	<ul> <li>Enforce the use of quality materials housing development, in accordance with the housing code</li> <li>Incorporate renewable energy technologies in housing</li> </ul>
Reduce the risk of flood	<ul> <li>Incorporate the risk of flooding in urban planning</li> <li>Improve housing development drainage systems</li> </ul>
Maintain and repair houses	<ul> <li>Promote the development of local infrastructure maintenance and repair services</li> <li>Support the provision of plumbing and electrical services by local entrepreneurs</li> <li>Provide scheduled maintenance and repair services</li> </ul>

Table 7. Summary of priorities and actions to improve housing quality

#### 3.3. Implementing green technologies

Cree lifestyle has changed over the past decades and many people have become aware that some technologies currently used are not sustainable in the long term. Fears about the level of dependence of Cree communities on fossil fuel and electricity generated by large hydropower dams have been expressed. As climate change raises the issue of increased risk of major power outages, one important preoccupation is to improve self-sufficiency in power production. Solar panels are an option that some consider viable. Currently, solar panels are being used at certain hunting camps. Wind turbines, biomass or even geothermal could also be suitable avenues to increase energy self-sufficiency and produce electricity in the short term, depending on local context.

Waste management is also an important issue. Many informal garbage dumps have been observed on the land. Many people have expressed the need for more recycling facilities. The Cree Nation Government's department of Capital Works and Services provides funding for one ecocentre per community. Ecocentres provide a viable method to collect and store materials such as wood, metal, plastic, cardboard and hazardous waste, before it is sent down to larger collection centres in southern Quebec. Moreover, waste can also be a valuable resource, the recuperation of methane produced in engineered landfills is potentially a resource for different activities such as energy production. Compost of organic waste products resulting in fertilizer could also be used for local food production projects (i.e. gardens, greenhouses, planting of vegetation, etc.). In this case as in others, participants expressed the need for more opportunities to learn from the experiences in other communities.

The implementation of renewable energy technologies such as solar panels and wind turbines, along with the development of new techniques of waste management are opportunities to provide specialized and technical training for the youth. Such technologies usually work in decentralized ways – off-grid – and do not require the integration of large-scale structures. It becomes increasingly achievable for people in local communities to play important roles in the provision of power and waste management systems. Participants hope that the implementation of these new technologies will have a snowball effect and increase economic development opportunities, once the knowledge is available locally.

Photo Credit: CreeNewable Energy

 Table 8. Summary of priorities and actions to implement green technologies

Priorities	Actions
Provide new technologies for power generation	<ul> <li>Implement appropriate technologies to improve local self-sufficiency in power generation</li> <li>Provide training within communities to ensure local capacity building</li> </ul>
Provide new technologies for waste management	<ul><li>Develop integrated waste management systems</li><li>Implement recycling systems</li></ul>
Support local entrepreneurship and innovation	<ul> <li>Support a network of local entrepreneurs to develop and diffuse green technologies and innovations</li> <li>Implement pilot projects to ensure the emergence of local entrepreneurs, which will diffuse new technologies</li> </ul>

Photo Credit: Pernilla Talec

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