

Networking for research: a human biomonitoring project in Dehcho and Sahtú Regions of the Northwest Territories

INTRODUCTION

The Dehcho and Sahtú First Nations are located in the Northwest Territories (NWT). **Country foods**, which have been associated with lower risk factors for cardiovascular disease and diabetes, are integral to the **health** and food security of First Nations communities in Northwest Territories [1]. However, concerns regarding **contaminants** such as mercury and cadmium in fish and moose meat, have led to a series of contaminant advisories in the Dehcho and Sahtu regions of the Northwest Territories. Therefore, the development of public health strategies related to contaminant exposures from country foods in the Northwest Territories need to strike a balance between risks and benefits [2]. Additional information regarding actual levels of contaminant exposure among First Nations individuals and communities is required. This can be best obtained through **biomonitoring**, which refers to the measurement of contaminant levels in human tissues fluids, thereby characterizing exposure in a way that accounts for dietary patterns and inter-individual toxicokinetics differences [3]. The project will use a **risk-benefit approach** to promote country food in order to improve nutrition and food security while lessening contaminant exposure among First Nations communities.

To succeed in this project, we have to :

- Build a useful and **rigorous** scientific study
- Design a project **respectful** for the Communities and individuals
- Generate **interest** for the project in communities (authorities and members)
- **Contextualize** the results (traditional values and behavior, food pattern)
- Translate results to community-level in a **relevant** way for First Nations
- Create public health messaging strategy **efficient** for communities



The acknowledgement of cultural and contextual factors, were elements proven to be useful in conducting effective community-based environmental health projects and lasting interventions [4]. Therefore, **networking** is essential to a project realization such as a biomonitoring study in First Nations Communities. Many organizations should be involved and here are who is currently involved and how they interact with other organizations.

RESEARCH METHODOLOGY

This Northern Contaminant Program (NCP) supported biomonitoring project is divided into four components:

- 1) Strengthening **partnerships** and community consultations;
- 2) **Biomonitoring** implementation;
- 3) Returning **results** to individual participants, comparing exposures to selected risk assessment guidelines;
- 4) Drafting **public health messaging** in collaboration with community groups, local governments and stakeholders.

Biomonitoring implementation includes:

- 1) **Recruiting** every interested participant 6 years of age and older;
- 2) Documenting the **food pattern** by a 24h-recall and a Food Frequency Questionnaire (FFQ);
- 3) **Sampling** of blood, urine and hair specimens;
- 4) **Analysing**:
 - Metals: Al, As, Be, Cd, Co, Cr, Cu, Fluoride, Fe, Hg, I, Mg, Mn, Mo, Ni, Pb, Pd, Pt, Sb, Se, Sn, Tl, V, Zn;
 - Fatty acid composition;
 - Organic pollutants (i.e. POPs).

ORGANIZATIONS INVOLVED IN THE PROJECT

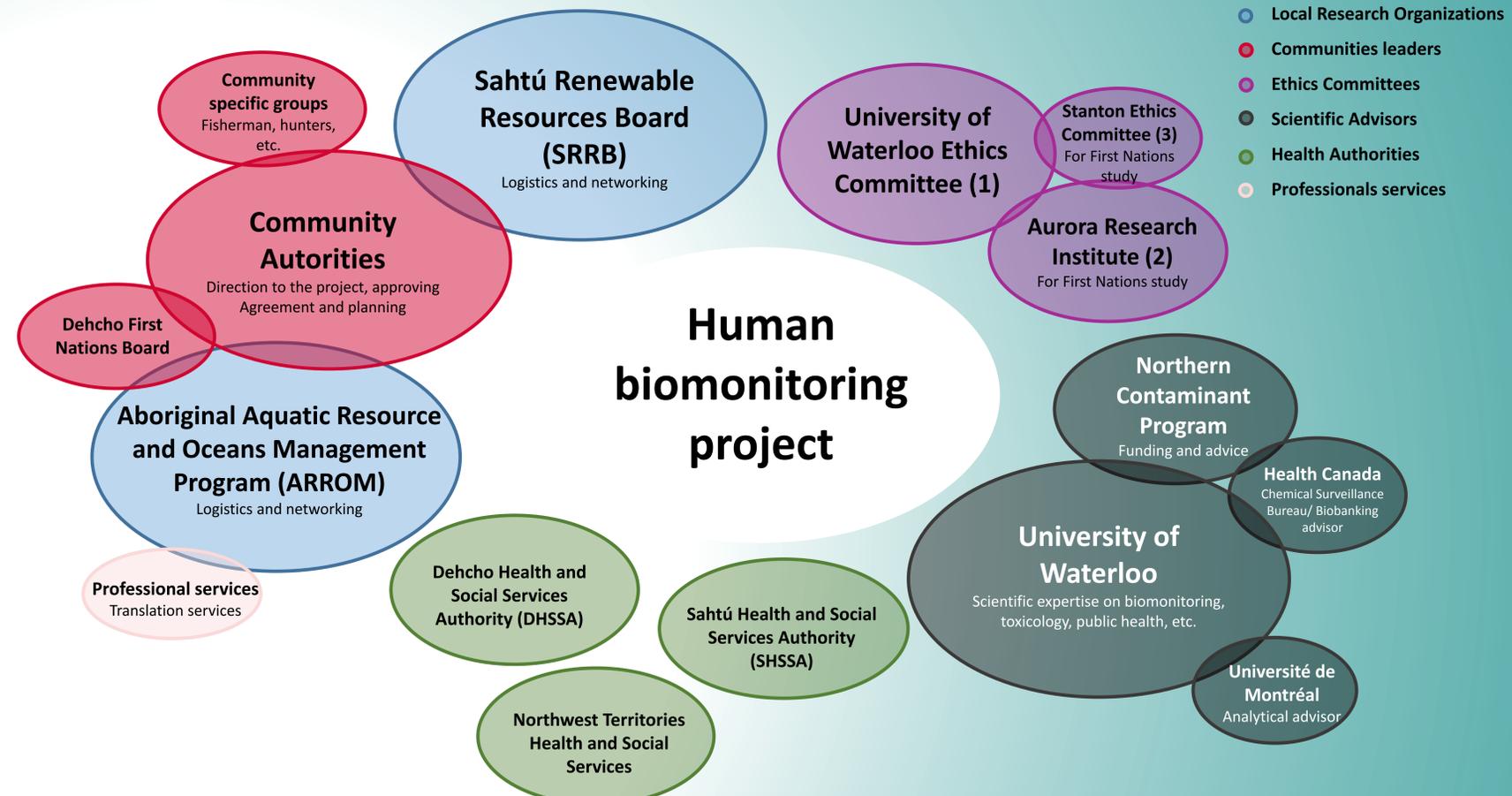


Figure 1. Partners involved in the project

DISCUSSION AND CONCLUSION

- Many organizations are involved, such as local Research Organizations, Community leaders, Ethics Committees, Scientific Advisors and Health Authorities.
- For the Dehcho and Sahtú First Nations project, our main partners are Community Chiefs, ARROM and SRRB coordinators and University of Waterloo.
- There is a small lack of **information translation** between those actors (i.e. ethics requirements).
- A **central coordinator** for research in First Nations communities could help to get in contact with organizations involved.

Overall, the biomonitoring project will improve knowledge regarding environmental risk among First Nations communities and will orient risk communication strategy.

Community-based project involving every knowledge users and decision makers is essential to conduct a biomonitoring project and to justify the relevance of the study.

LITERATURE CITED

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