

# SMARTICE

The SmartICE Approach: Empowering Indigenous communities to adapt to unpredictable ice conditions



Trevor Bell



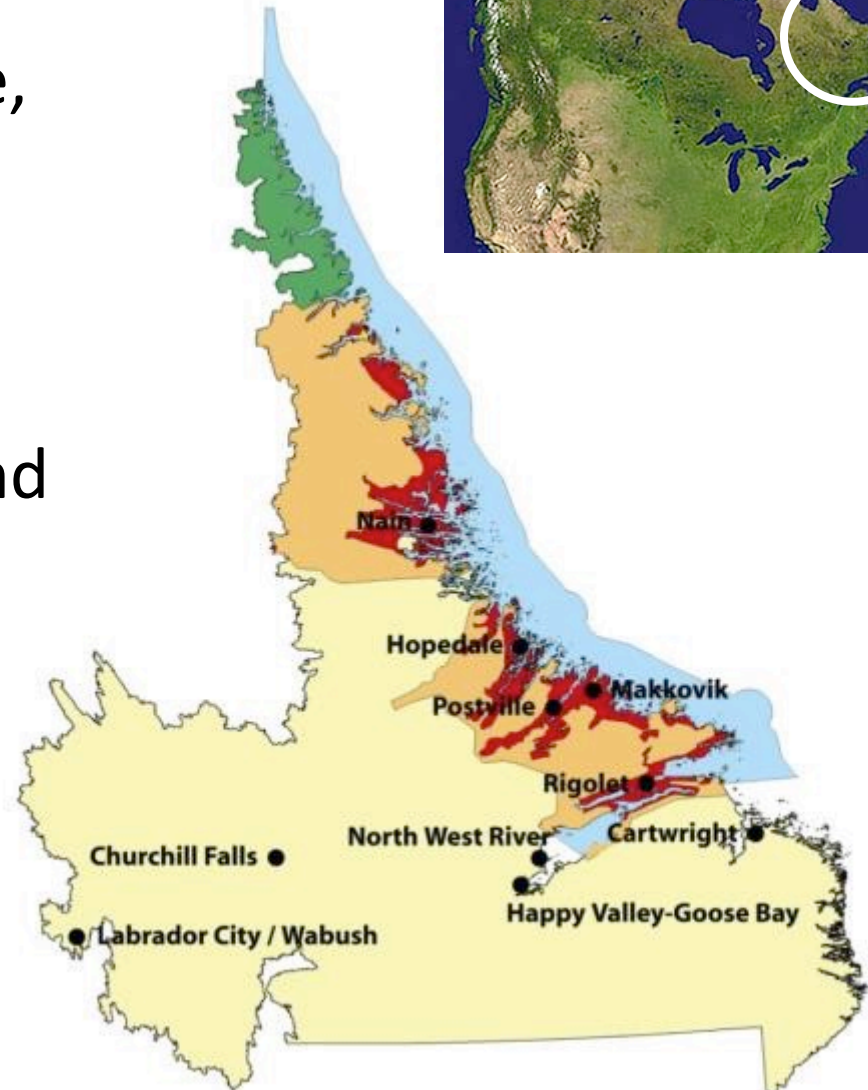
ARCTIC  
INSPIRATION PRIZE



# Nunatsiavut is the homeland of Labrador Inuit



- Recent Inuit self governance, political transition (2005)
- Rapid social and economic transformation
- Rapid community growth and expansion
- Infrastructure deficit



# Tukisinnik *(to understand)*

## Community Research Forum 2010



To openly discuss  
the frustrations,  
needs,  
opportunities, and  
potential of  
research in their  
region

# TUKISINNIK COMMUNITY RESEARCH FORUM REPORT

Nain, Nunatsiavut, 2010



## Forum outcomes

*Turning research inside out*

- **Mistrusted** research
- **Researcher** fatigue
- No longer interested in the **old ways** of doing research
- Wanted more focus on **research priorities that are important to Inuit**
- To work with experts on **addressing these priorities**



**NUNATSIAVUT**  
kavamanga Government

# Embracing the knowledge economy



# Priorities for Research in Nunatsiavut



Housing



Climate Change



Food Security



Sea Ice



Energy



Species Change



Development



Health

- Improve connection between research and policy
- Establish process to systematically collect data on areas of importance for Nunatsiavut



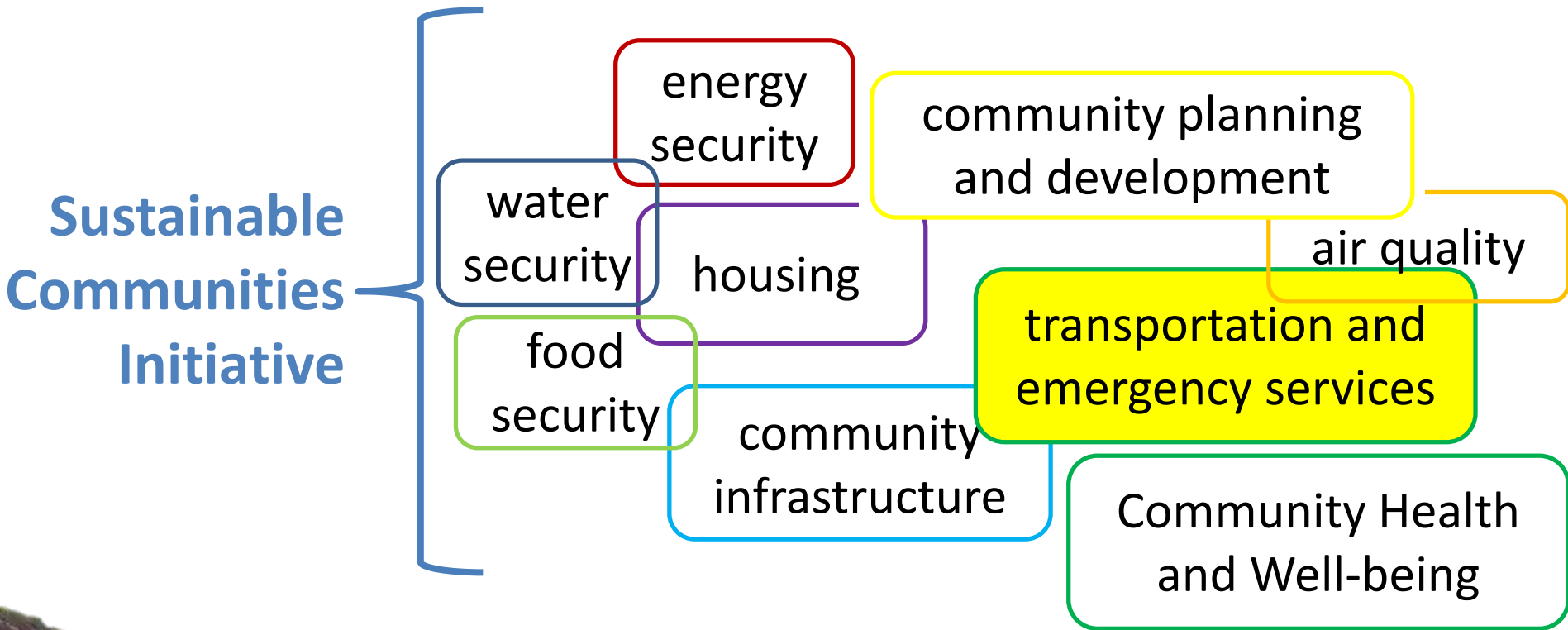
“Time to try something different...”

*JOINT MANAGEMENT COMMITTEE OF THE NUNATSIAVUT GOVERNMENT*



Sustainable Communities Initiative  
SakKijânginnatuk Nunalik

*SakKijânginnatuk Nunalik*  
An integrated holistic approach





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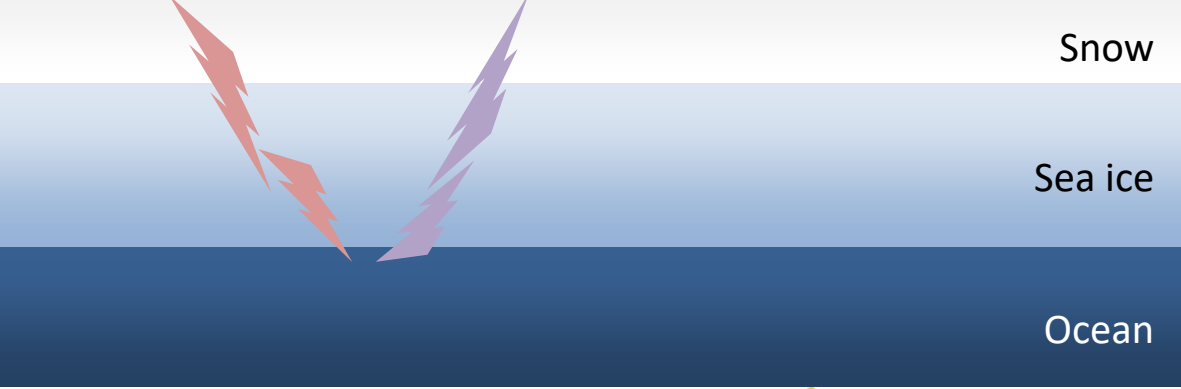
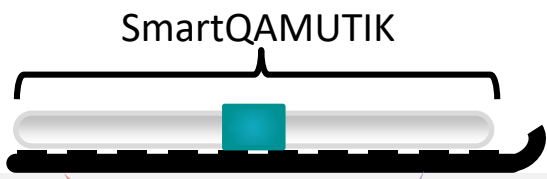


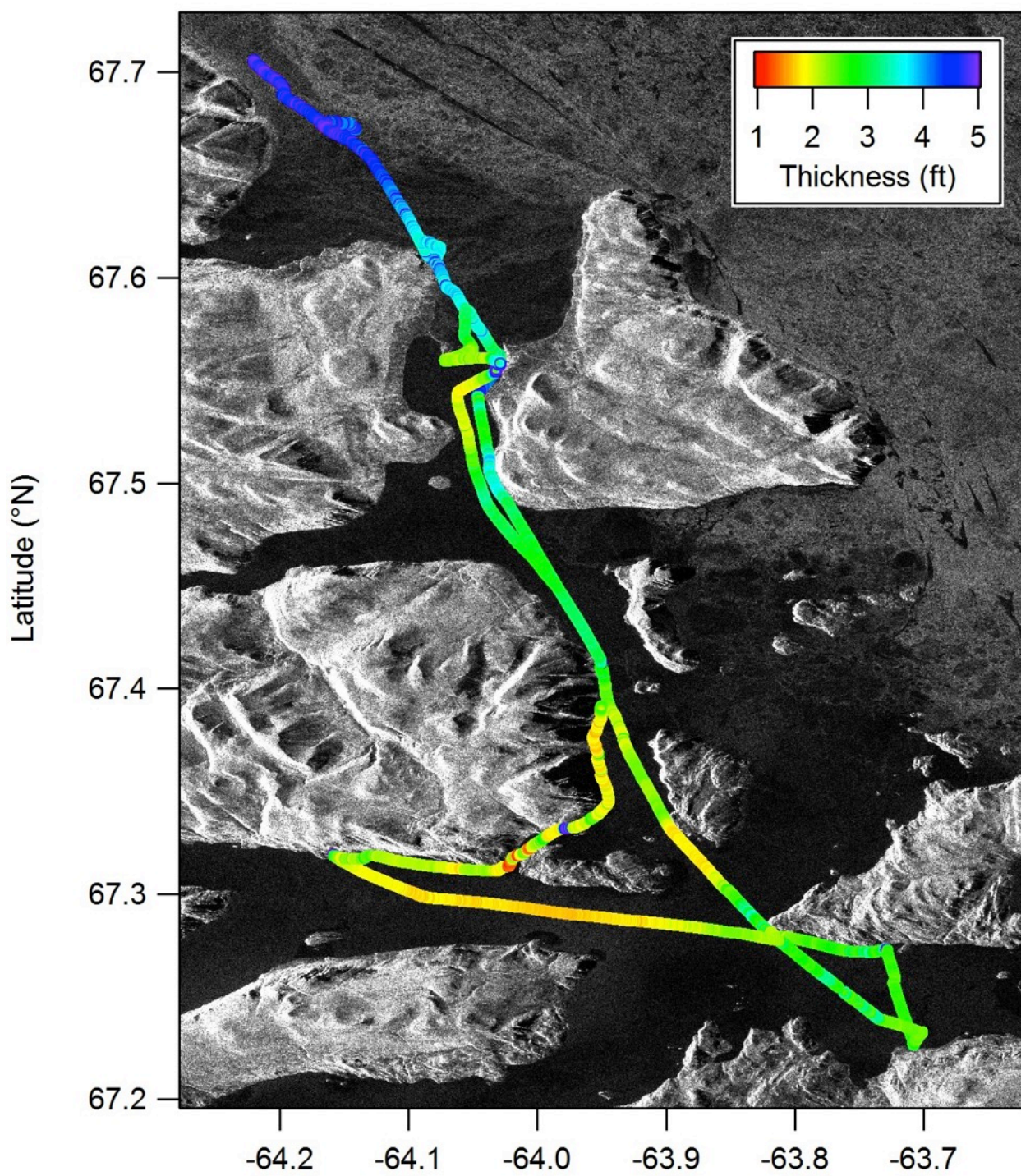
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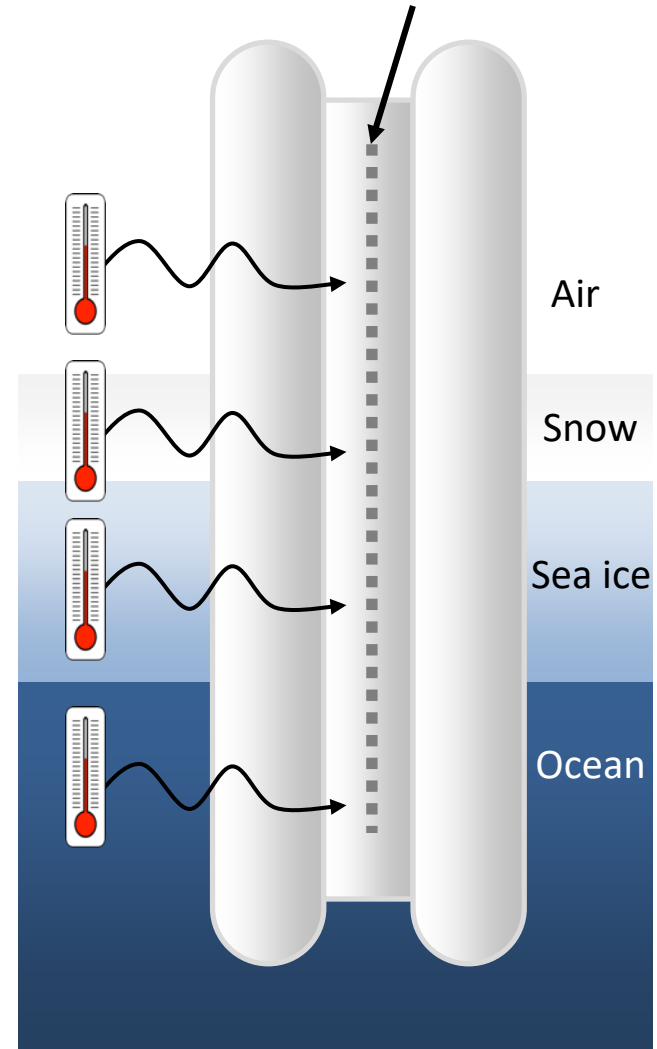


# SmartBUOY

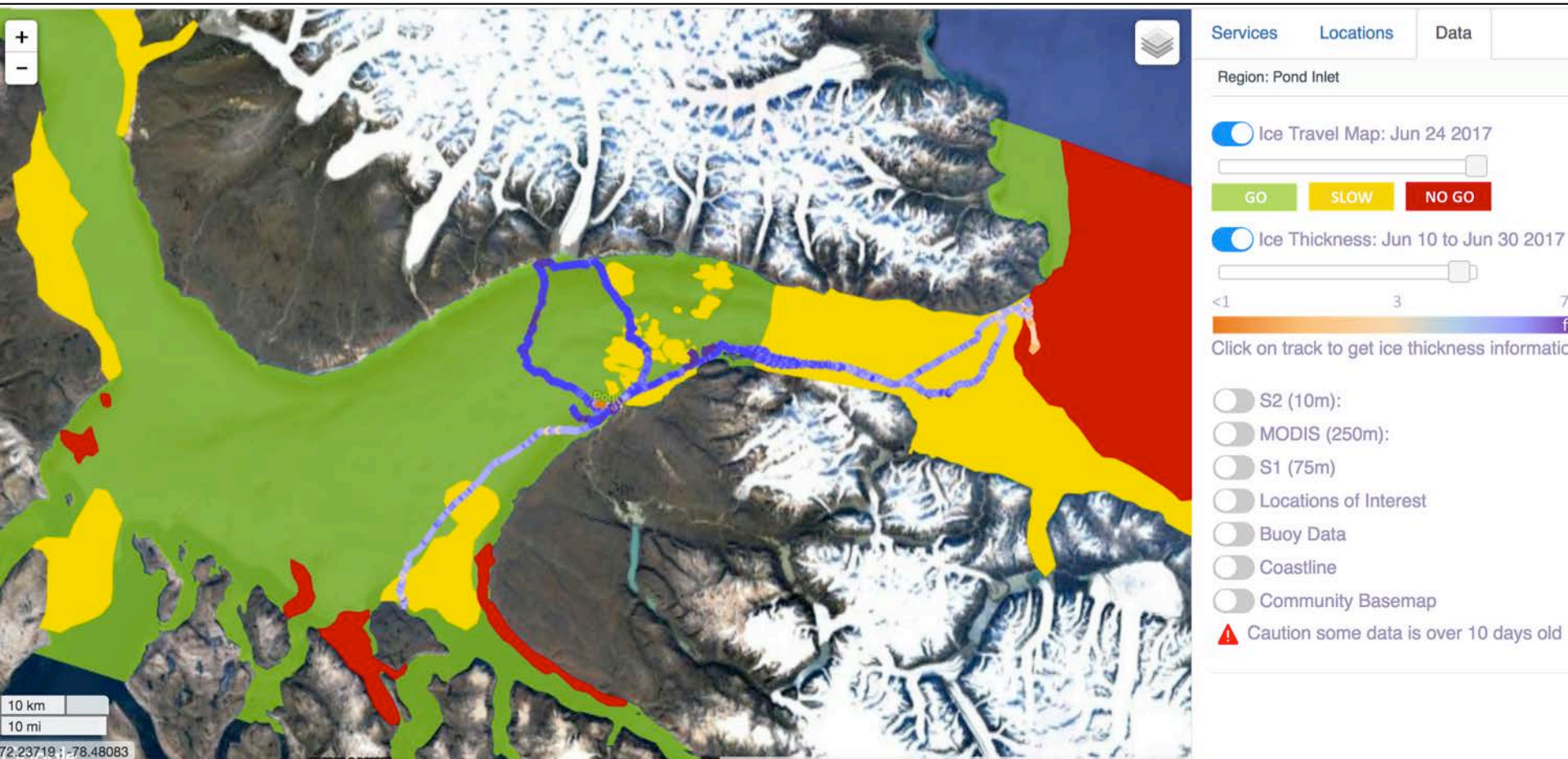
sea-ice thickness sensor



Thermistors



# Combining local knowledge and satellite imagery to produce Inuit-relevant sea-ice travel hazard maps



A person wearing a dark winter jacket and a helmet is sitting on a white and black snowmobile. The snowmobile has "ski-doo" written on the front. The person is in a snowy, open landscape. In the background, there is a large, tall, white iceberg. The sky is clear and blue.

# SMART ICE

Technological Innovation

Responds to community priorities

# Living with climate variability & change



**Increased fear of travelling on the ice**

# Unpredictable, hazardous sea ice in Nunatsiavut

- **During winter 2009/10 in Nain:**
  - **1 in 12 surveyed fell through the ice**
  - **Two-thirds felt scared when traveling on ice**
  - **Half of those surveyed couldn't use their typical hunting and travel routes**

■ **NEWS:** Nunavut January 21, 2017 - 3:35 pm

**Bombardier snow machine falls through sea ice,  
killing three Nunavut men**

**One man survives, one confirmed deceased at scene, two lost**

**NUNATSIAQ NEWS**



Integrates Inuit knowledge about ice



SMAR  ICE

Indigenous Innovation

# Inuit Societal Values



- Caring for the environment (*Avatittinnik Kamatsiarniq*) and community (*Pijitsirniq*)
- Being innovative and resourceful (*Qanuqtuurniq*)

# SMART ICE

Social Innovation

Social innovation is about creating solutions to challenges, putting people and communities first



MOMENTUM  
FOR CHANGE



# SMAR ICE

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*Sikumiumut*

HTO  
Hamlet  
Elder  
Outfitters  
Search and Rescue  
Rangers  
Parks Canada  
Wildlife Officer  
Fisheries  
Young hunter

Directly involves community in all operations



**SMART ICE**

Promoting northern entrepreneurship & innovation  
Developing a knowledge economy in communities





# UN Climate Change Climate Action

Search

Paris Agreement

Climate Action

COP23 Bonn

UNFCCC Process and  
Meetings

## Winners of 2017 UN Climate Solutions Awards Announced



The UN *Momentum for Change* initiative shines light on some of the most **innovative**, **scalable**, **replicable** and **practical** examples of what people across the globe are doing to combat climate change.

# Mapping & monitoring of other hazardous ice conditions



**SMART ICE**  
Technological Innovation

# Freshwater ice monitoring





3,160-kilometre winter road system  
30 First Nations communities  
Investing \$5.8 million annually

## Far North of Ontario



## From feasibility to sustainability



Building a **SUSTAINABLE** social enterprise

Maximizing social impact

Creating positive community change

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