

NSERC PermafrostNet

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Natural Sciences and Engineering
Research Council of Canada

Conseil de recherches en sciences
naturelles et en génie du Canada

Canada



Carleton
UNIVERSITY

Hosted by



PermafrostNet.ca

2019–2024, NSERC strategic network

- 16 applicants
- 12 Canadian universities
- 41 partner organizations*
- 31 collaborators*
- 60 HQP (PhD, MSc, PDF, northern RA)
- Hosted at Carleton university

* academia, industry, government, international

Partners and Institutions



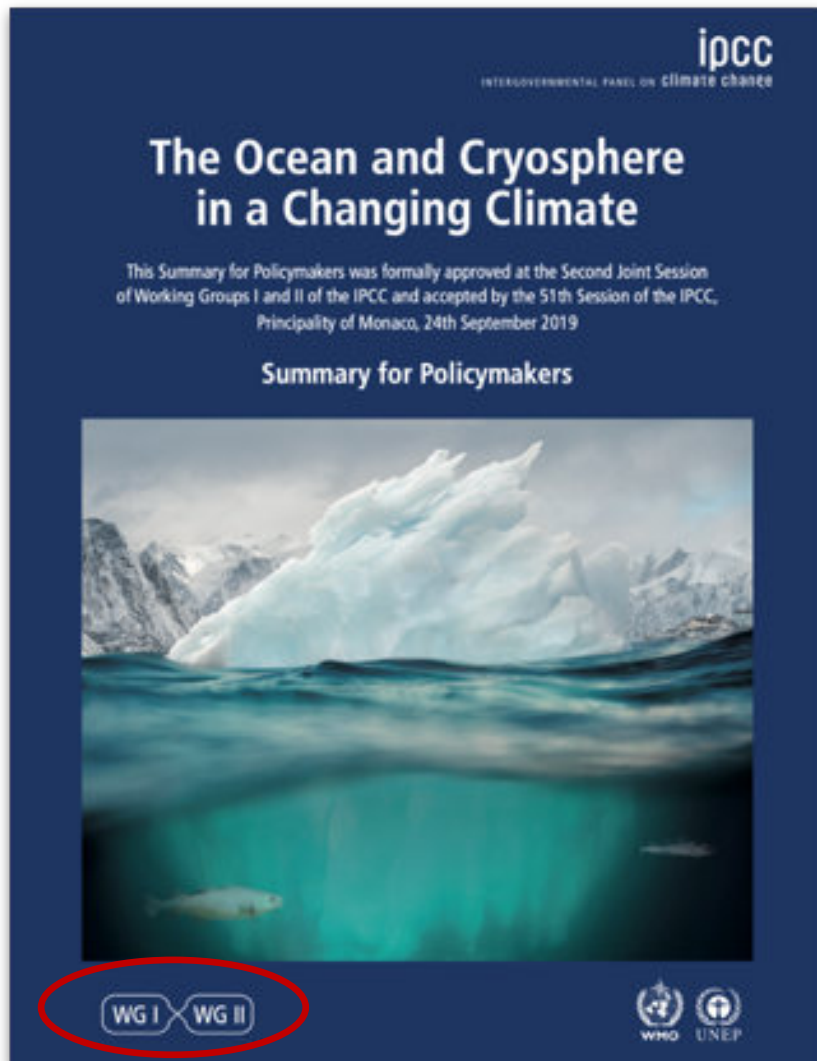
BGC Engineering Inc.
 British Columbia Ministry of Forest,
 Canada Centre for Mapping and Earth Observation
 Canadian Consortium for Arctic Data Interoperability
 CCI Permafrost
 Crown-Indigenous Relations and Northern Affairs Canada
 ECCC, Atmospheric Science and Technology Directorate
 ECCC, Canadian Centre for Climate Services
 Federation of Canadian Municipalities
 Fort Severn First Nation
 Government of Nunavut: Climate Change Secretariat
 Government of the Northwest Territories; Environment and
 Natural Resources
 Gwich'in Renewable Resources Board
 INTERACT / Lunds Universitet
 Lands, Natural Resource Operations and Rural
 Development
 MDA Ltd
 Ministère des Transports du Québec
 National Research Council
 National Snow and Ice Data Center, CIRES
 Northwest Territories Department of Infrastructure
 Northwest Territories Geological Survey
 Nunataryuk / Alfred-Wegener Institute
 Ontario Ministry of Natural Resources and Forestry
 Polar Knowledge Canada
 Swiss Permafrost Monitoring Network PERMOS
 T-MOSAic
 Tr'ondëk Hwëch'in Government
 Transport Canada
 Yukon Department of Community Services
 Yukon Government: Department of Environment
 Yukon Government: Transportation Engineering Branch
 Yukon Government: Yukon Geological Survey
 Yukon Parks and Tombstone Territorial Park

This presentation

- Context IPCC-SROCC
- Network research – five years in longer context
- Where we are now



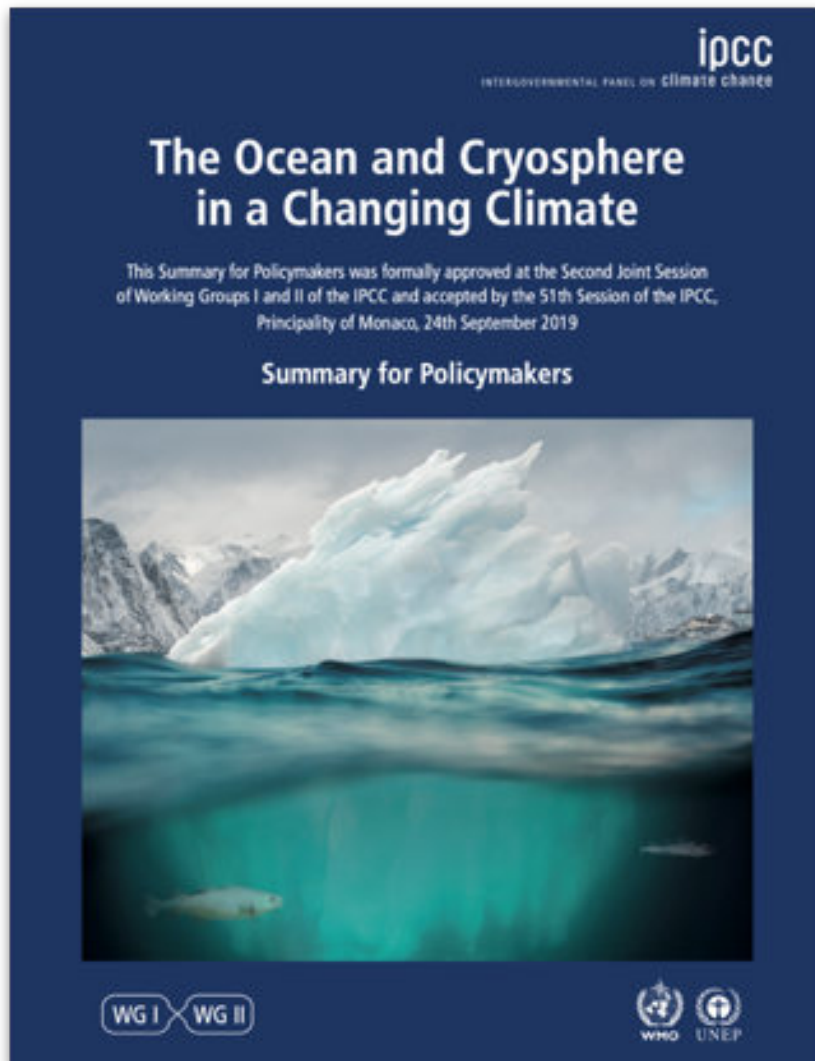
Projected changes and risks



- Widespread permafrost thaw is projected for **this century and beyond**. {B1.4}
- Disaster risks to human settlements and livelihood options are expected to increase due to future changes in **hazards** and increased **exposure** of people and infrastructure. {B7.1}
- Current engineered risk reduction approaches are projected to be **less effective as hazards change** in character. {B7.1}

[statements shortened from original text]

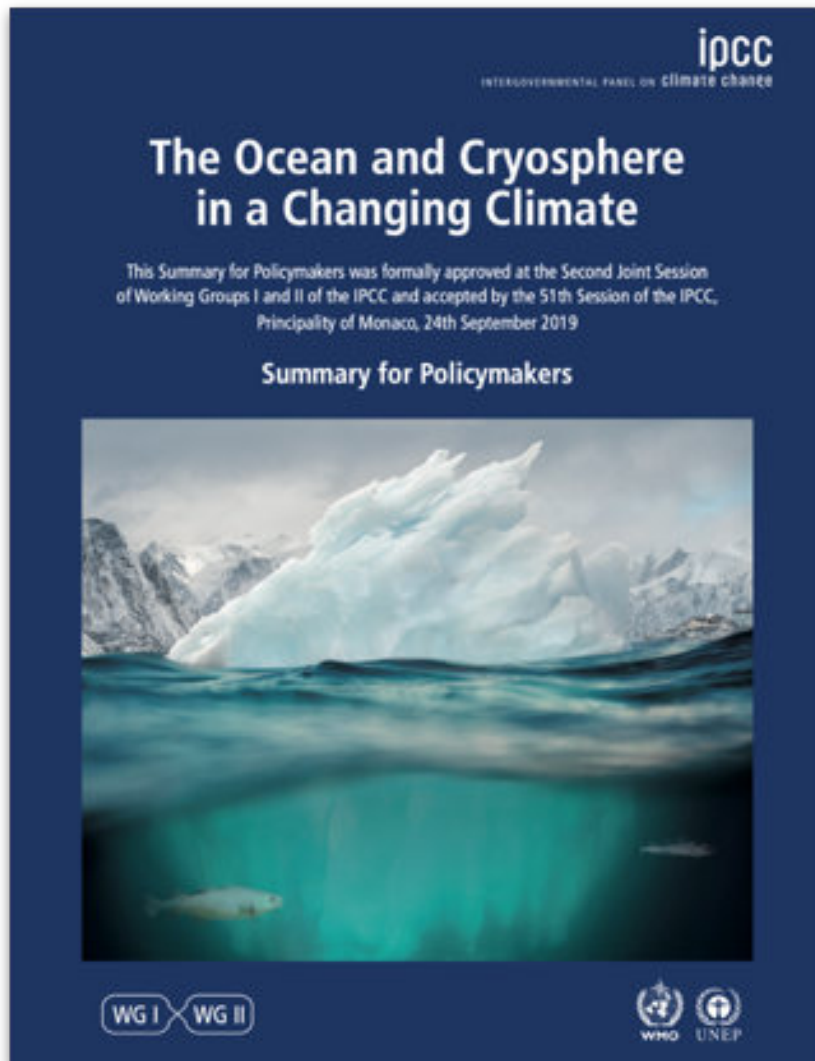
Implementing responses – challenges



- Climate change impacts and their societal consequences operate longer time horizons than governance arrangements. Such **temporal differences challenge the ability of societies to adequately prepare for and respond to long-term changes.** {C1.1}
- People with **highest exposure and vulnerability** to current and future hazards are often also those with **lowest adaptive capacity.** {C1.4}

this is in terms of access to resources (not culturally)

Implementing responses – enabling conditions



- Intensifying cooperation and coordination among governing authorities **across scales, jurisdictions, sectors, policy domains and planning horizons** {C4.2}
- **Education and capacity building** at various levels and scales [...] utilization of **multiple knowledge systems** {C4.4 }
- **Monitoring and forecasting** inform adaptation planning, implementation, and robust decisions. {C4.5}

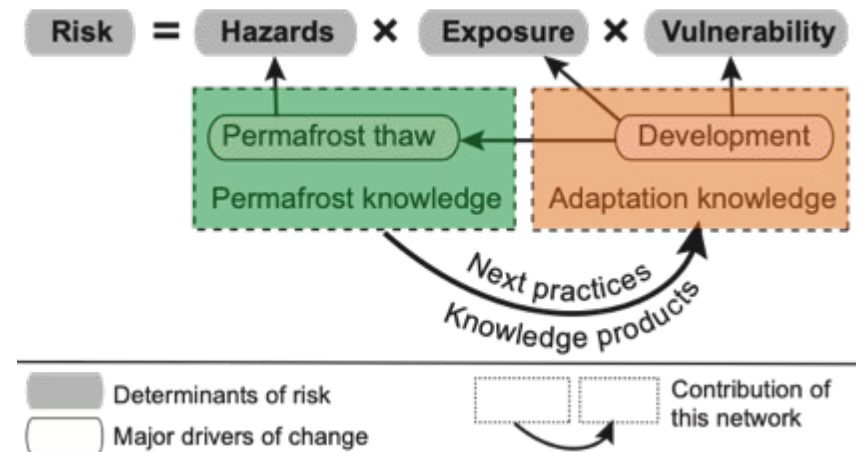
PermafrostNet: goal and objectives



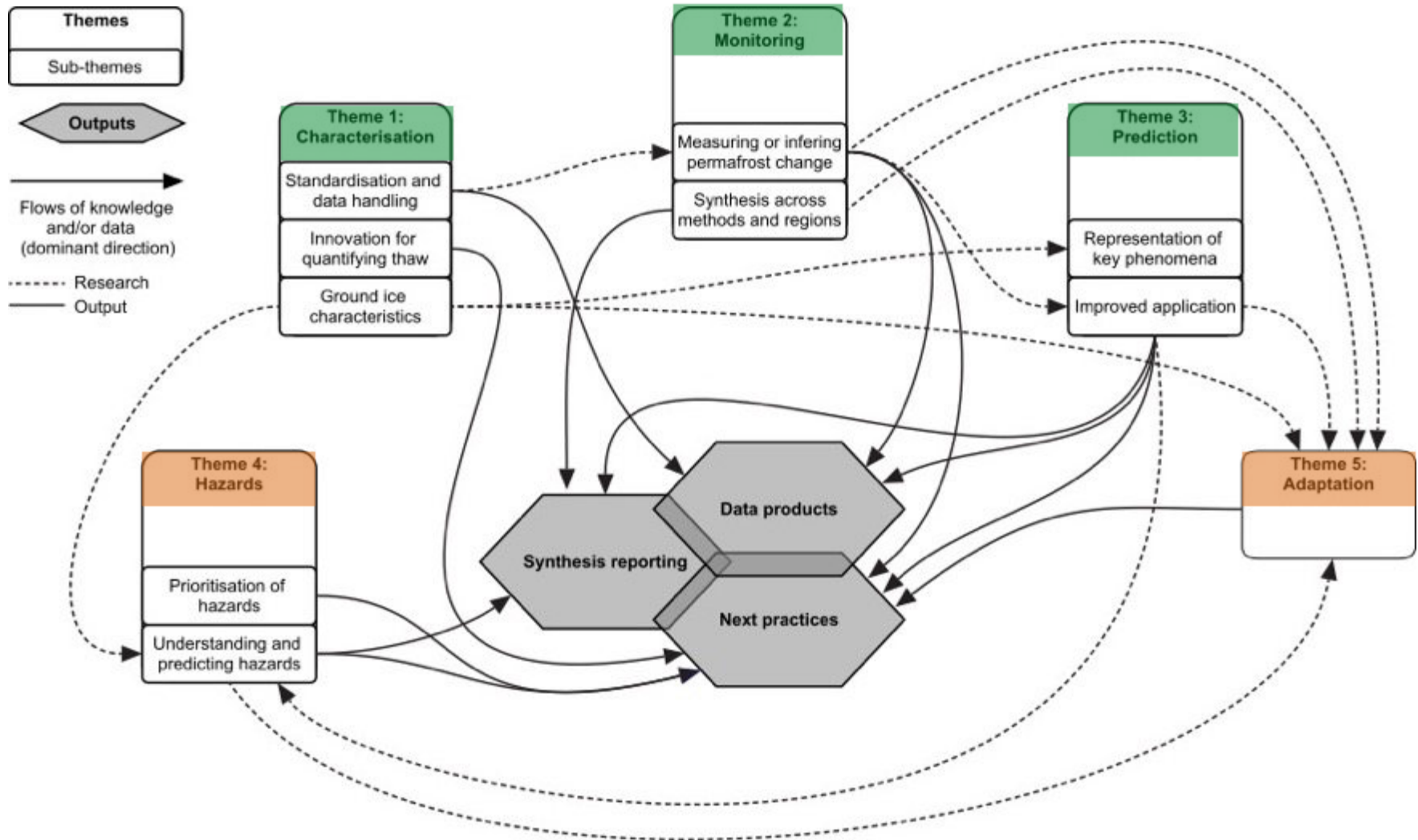
PermafrostNet's goal is to boost Canada's ability to adapt to permafrost thaw.

Objectives:

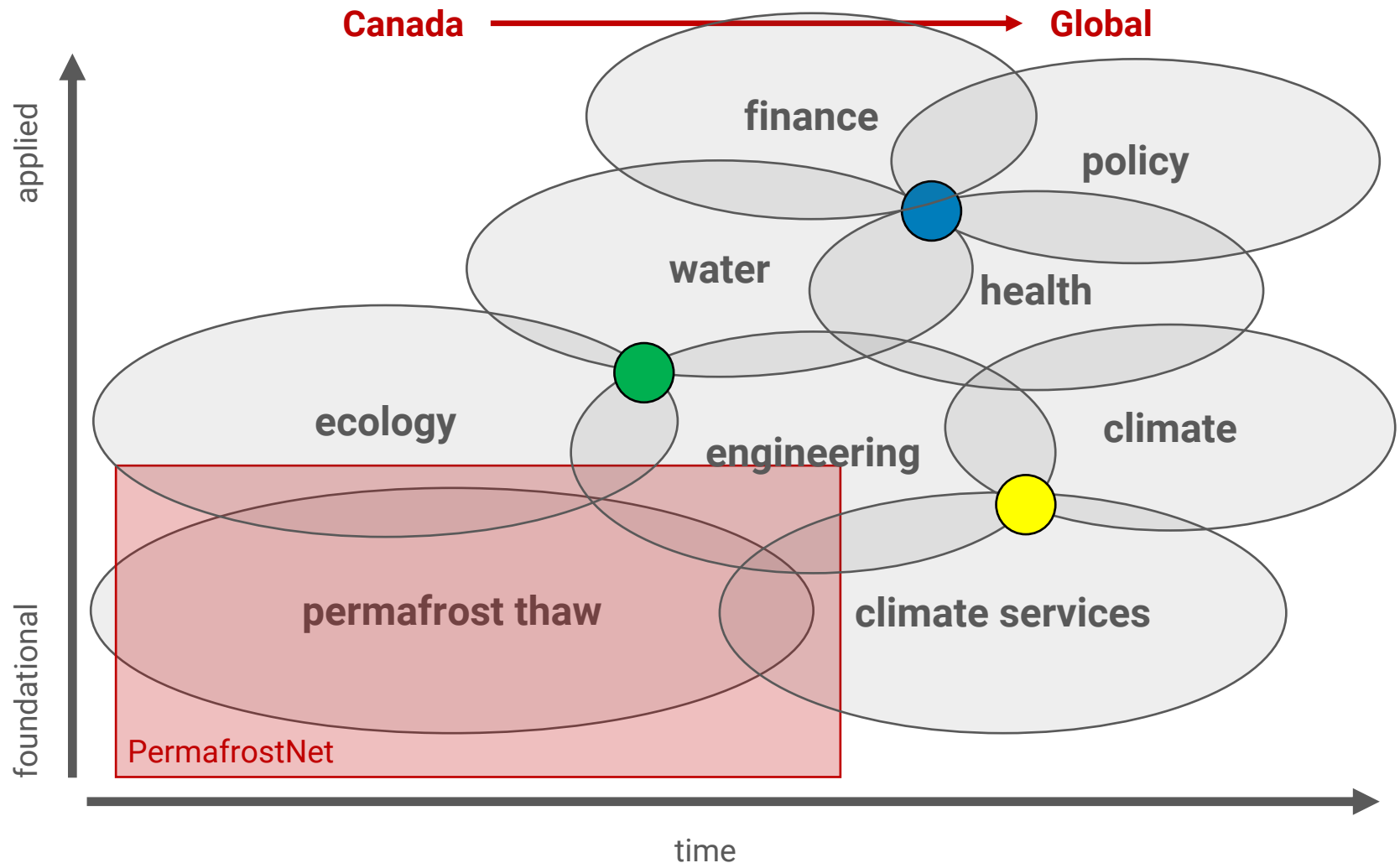
1. Quantify and predict permafrost thaw
2. Connect spatial scales
3. Prototype data & knowledge products

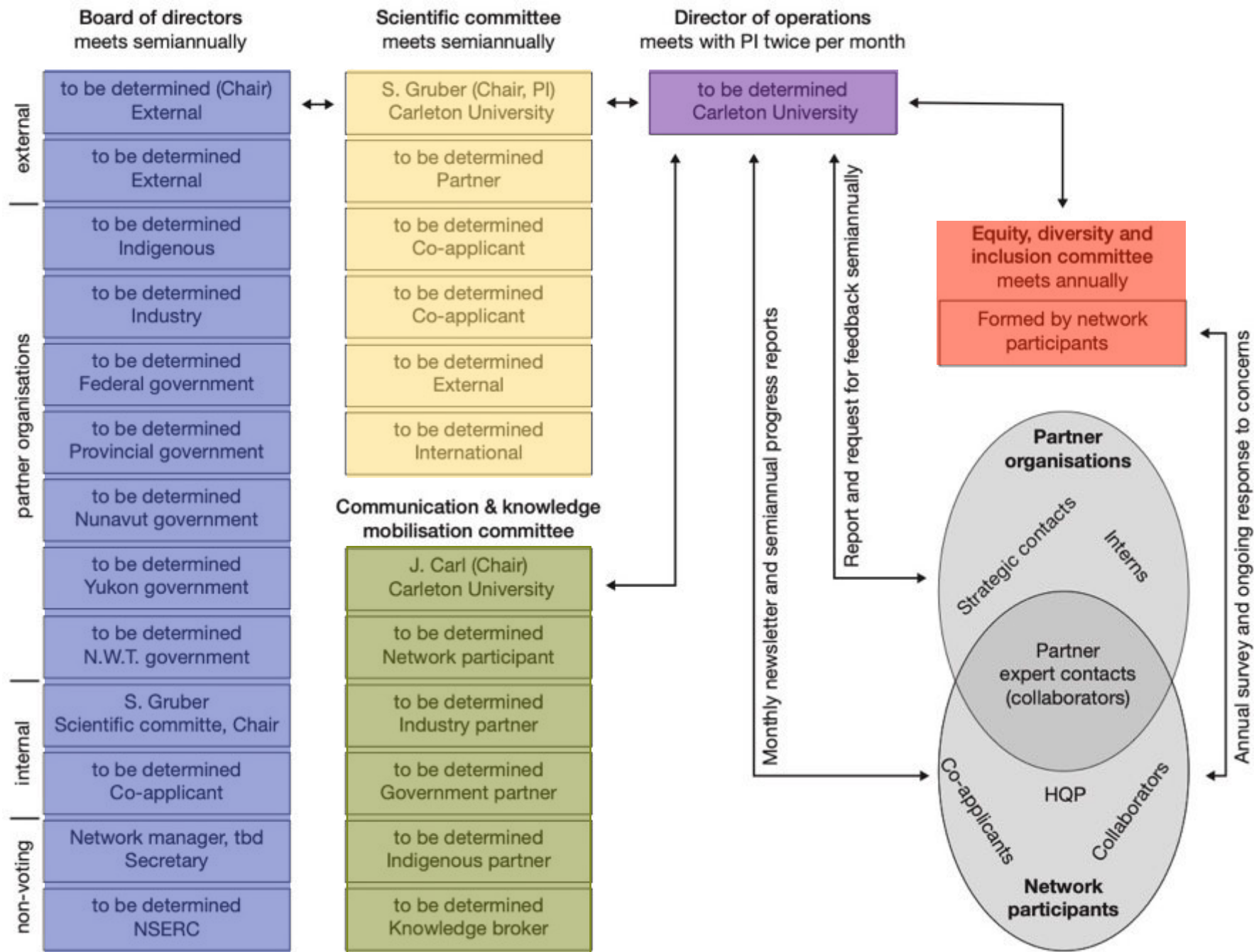


Research themes and output



PermafrostNet: the longer term





Evolution of activities



Bread-and-butter (operation)

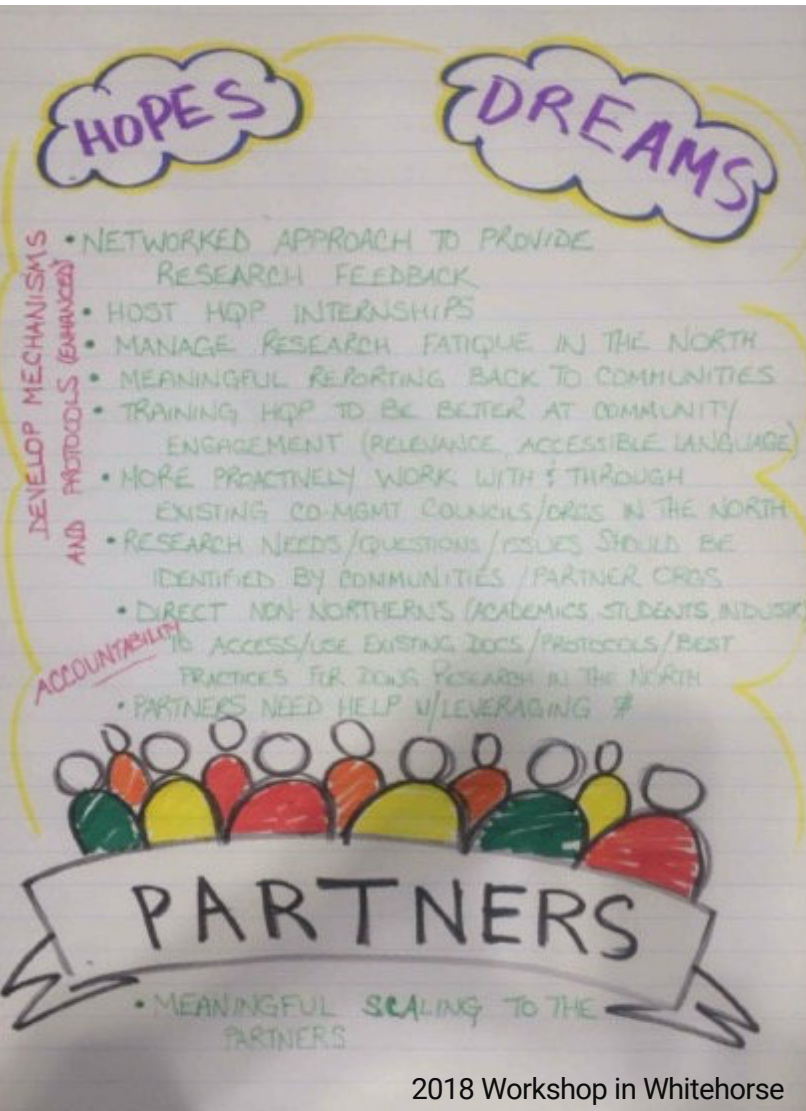
1. Ramp-up, define procedures
2. Guiding planned research
3. Shepherd outputs

Rigidity and flexibility

Icing and cherry (collective leadership)

1. Consciously evolve network vision, principles and culture
2. Distil priorities for next phase
3. Strategize on next steps

PermafrostNet – implementation



Where we are right now

- Administrative centre operates
- Communication is developing
- Data Scientist working
- Finding HQP
- First Annual General Meeting now.
 - Board of Directors
 - Scientific Committee
 - KMCCom
 - EDI Committee

We aim to **coordinate and co-locate** with other initiatives as far as possible (carbon footprint, time, money)