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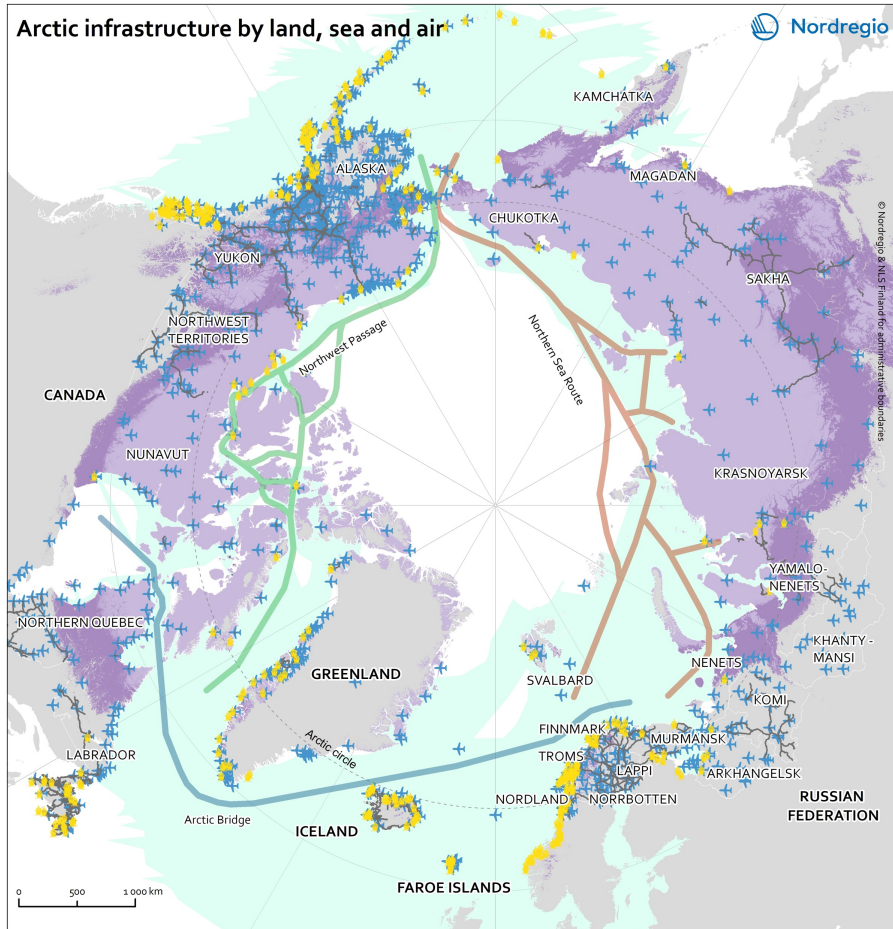
austrian  
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institute

# InfraNorth Future Scenarios for Arctic Communities

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APRI 10<sup>th</sup> Anniversary Annual Meeting, Vienna

November 9, 2023



**Arctic infrastructure**

- Road network
- Harbours
- + Airports and heliports
- Vessel traffic area

**Permafrost extent**

- Future permafrost extent
- Baseline permafrost extent

*Data sources:*  
 Road - Natural Earth, Alaska Department of Transportation and Public Facilities, GeoGratis and DIVA-GIS;  
 Airport - OpenFlights, OurAirports;  
 Harbour and sea routes - MarineTraffic, NOAA, Nordregio, NSIDC, World Port Index (NGA) 2017, AIS vessel tracking data;

*Permafrost - Hjort, J., Karjalainen, O., Aalto, J., Westermann, S., Romanovsky, V.E., Nelson, F.E., Etzelmüller, B. and Luoto, M., 2018. Degrading permafrost puts Arctic infrastructure at risk by mid-century. Nature communications, 9(1), p.5147.*

# Building Arctic Futures: Transport Infrastructures and Sustainable Northern Communities (InfraNorth) (January 2021 – December 2025)



**What Is the Role of Transport Infrastructures in Sustaining Arctic Communities?**



Peter Schweitzer, Prof.  
Project PI, UV



Olga Povoroznyuk, Postdoc researcher  
and coordinator, UV



Philipp Budka, Postdoc  
researcher, UV



Alexandra Meyer  
PhD researcher, UV



Katrin Schmid  
PhD researcher, UV



Nikita Strelkovskii,  
Research scholar, IIASA

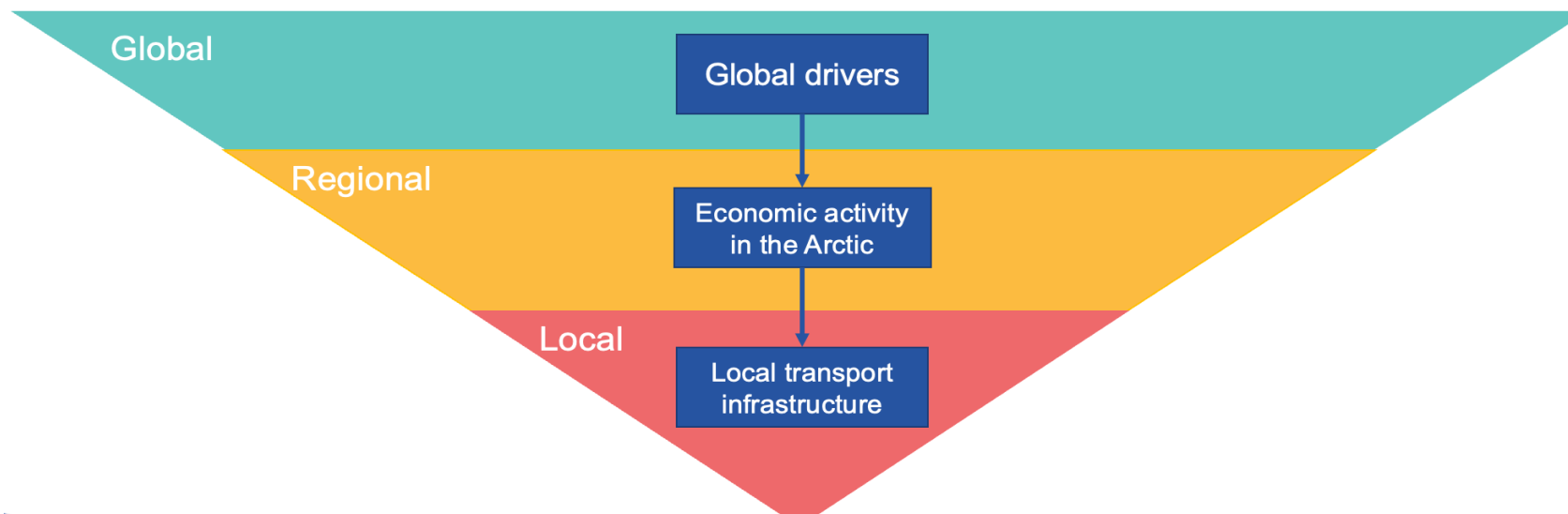
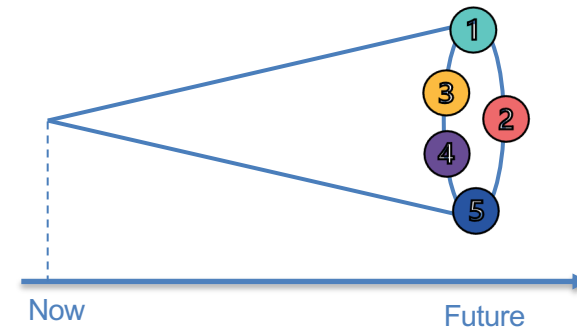
# Where We Work



- Russian Arctic
- European Arctic
- North American Arctic

# Scenarios and Scenario Building

- **Scenario building** is a method of creating scenarios to explore different plausible futures
- A **scenario** is a **thought-provoking narrative** about a **plausible future** of a studied system, such as a community
- Multiscale morphological analysis of current trends
- Temporal perspective: one generation



# InfraNorth Scenario Process

- Regular team meetings
- Community consultations
- How can Arctic communities develop by 2050?
- Factors: geopolitics, climate change, economic activities, transport infrastructure, population dynamics
- Scenario narratives and illustrations



Planning a workshop in Kirkenes at the Barents Institute.  
P. Schweitzer

# Churchil, Canada, Aug 16-17, 2023

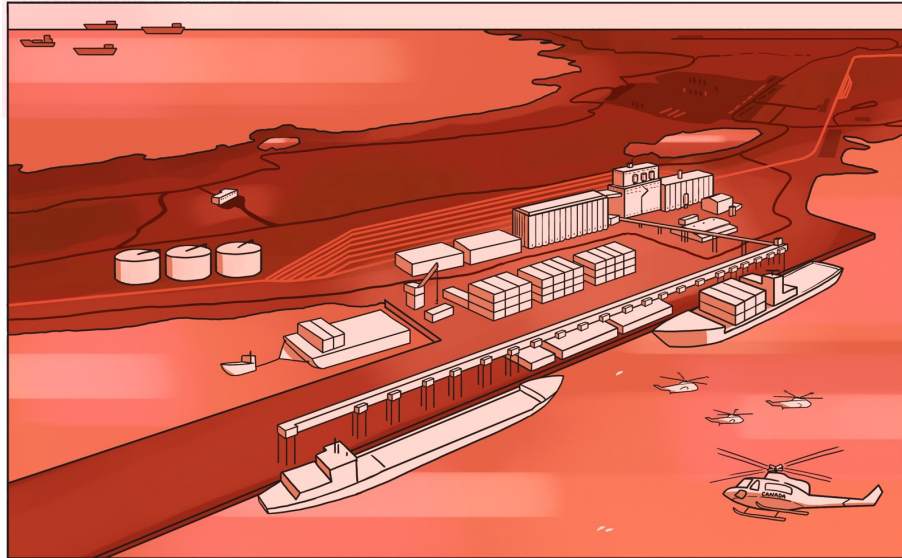


Sign at the entrance to the town

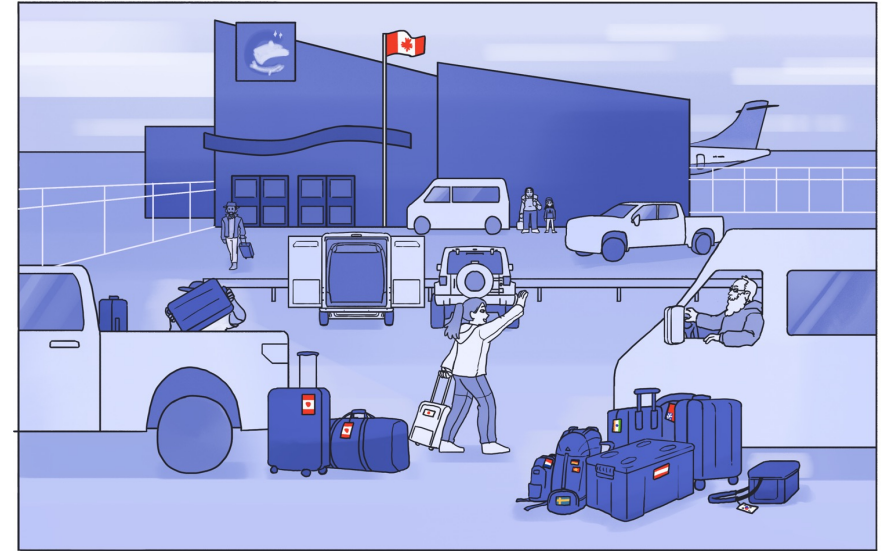


The Churchill sea port and grain elevators

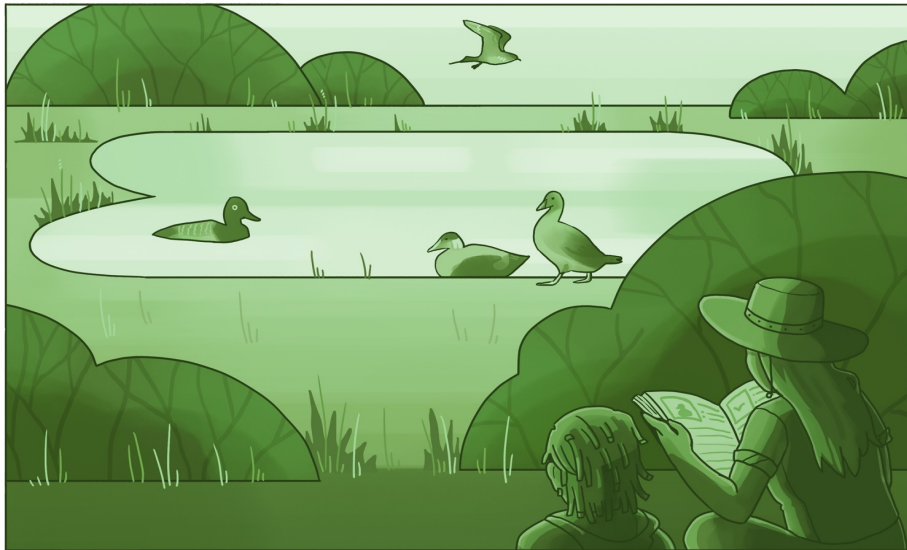
# Scenarios



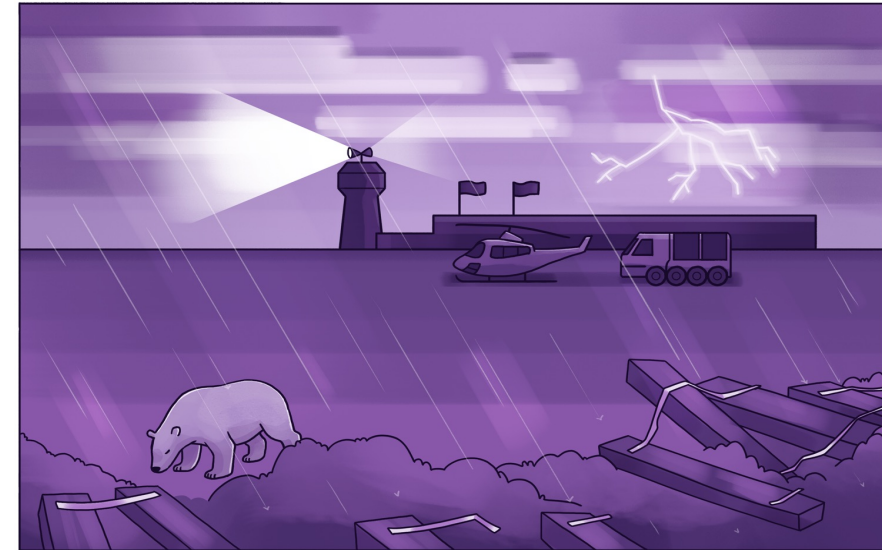
1. Resource base



2. Growing hub



3. Sanctuary



4. Abandoned land

Illustrations by  
Nickia Mylvor



# Sessions



Assessing scenario at the public workshop



Co-creating futures at experts' workshop. P. Schweitzer

# Kirkenes, Norway, Sept 21, 2023



Russian ships in the port of Kirkenes



View of Kirkenes in winter

# Scenarios



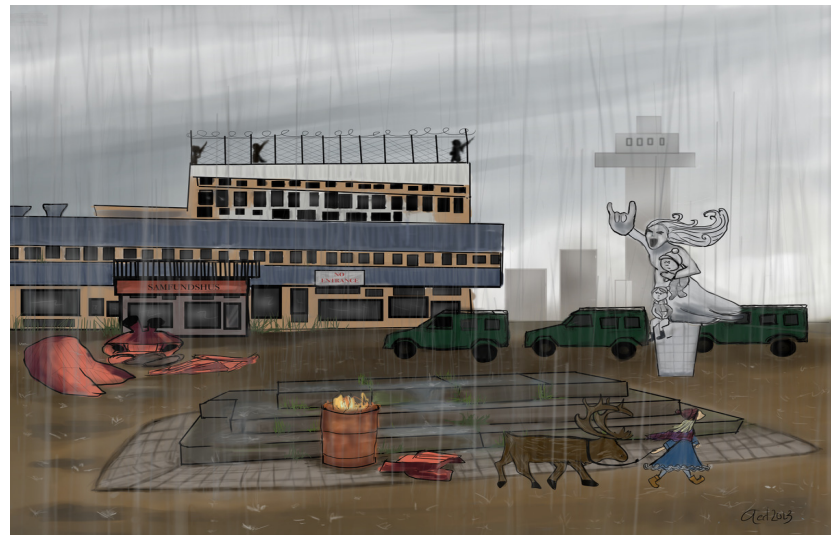
1. Industrial town



2. Global transportation hub



3. Innovative polar reserve



4. Military outpost

Illustrations by  
*Anja Eline  
Danielsen*

# Sessions



Local hosts introducing the public workshop



Assessing scenarios at the experts' workshop. P. Schweitzer

## Conclusions and Plans

- Local scenario workshops as part of CBR
- From strong local engagement to co-creation
- Data: questionnaires, "creative assignments", recordings
- Processing and analysing data and co-writing
- Academic articles and applied products

# Local Partners



**Sør-Varanger  
kommune**



# Contacts

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Thank you!