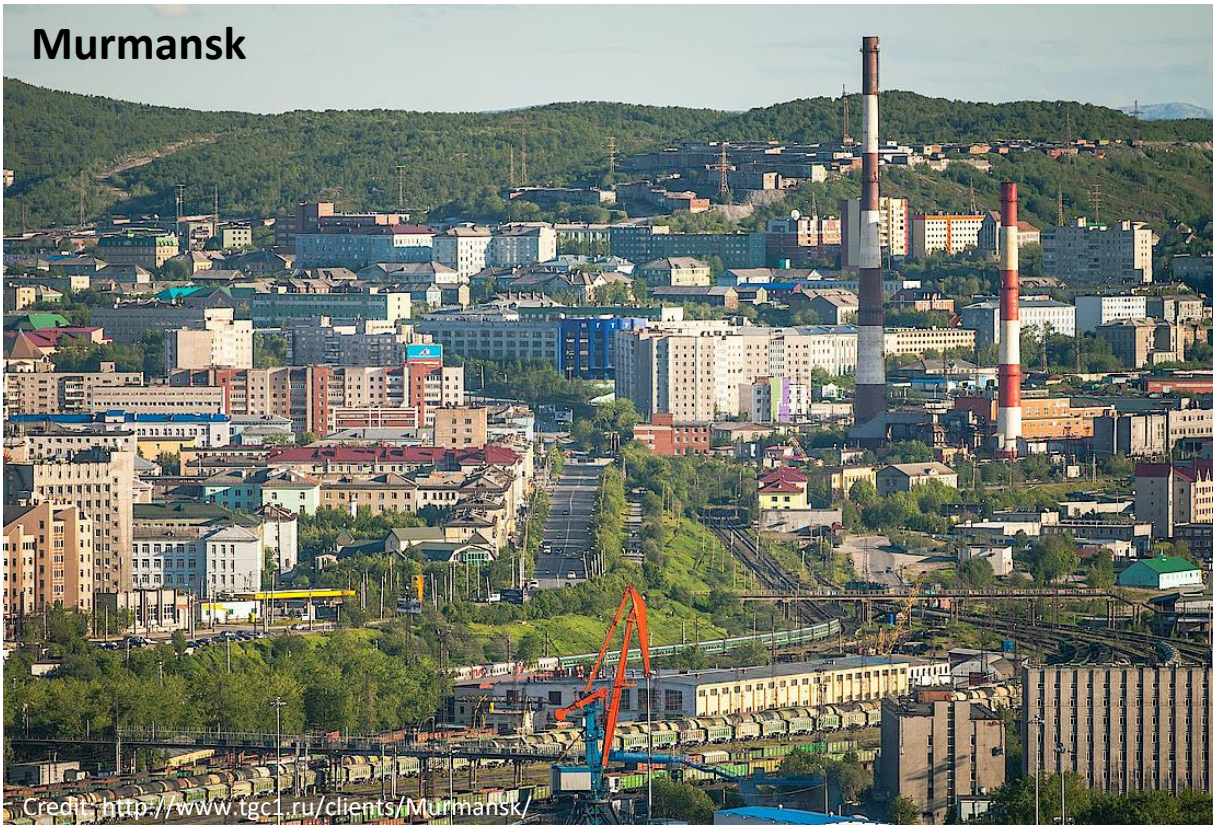


Murmansk



Tromsø



Climate Change Adaptation and Water Management in the Urban Arctic

**Nadezhda Filimonova
Arctic Centre, University of Lapland
Webinar, April 1st, 2025**



Obstacles for climate policymaking in small and medium-sized cities



Small population,

Budgetary
constraints,

Limited
technological and
scientific
advantages,

Remoteness.

How and why do interactions between non-state actors (NGOs, academics), national/regional, and local governments enable or constrain local policymaking of urban (storm)water management?

Research questions

How and why do the impacts of climate change and environmental issues facilitate or hinder urban (storm)water management policy formation?



Source: Municipal Sector Plan for Stormwater Management.

Why is research on urban (storm)water management in the Arctic important?

- ☐ Climate change occurs in the Arctic four times faster than in the rest of the globe.
- ☐ The projected increase in weather extremes could be followed by severe flooding, resulting in damage to urban infrastructure.
- ☐ Lack of sanitation infrastructure.
- ☐ Arctic cities' unique challenges.

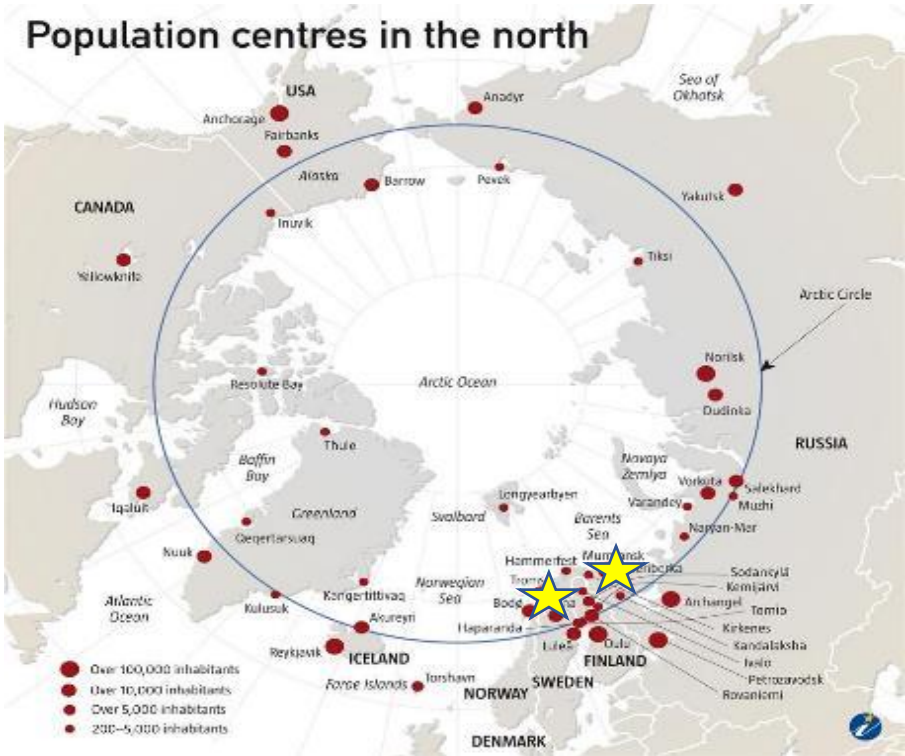
The state of the art

- ❑ Water security vulnerabilities in the rural Arctic (Berner et al. 2016).
- ❑ Management and adaptive capacities of Indigenous communities (Berner et al. 2016; Williams et al. 2019).

Case studies



Parameters	Murmansk	Tromsø
Population size	282,851 (2021)	77,095 (2021)
Administrative center	X	X
Arctic port city	X	X
Status of climate change policies	No official document	“Environment, Climate and Energy Plan” (2018-2025)



Credit: Heikkilä and Laukkanen 2013

Case studies

Tromsø	Murmansk
Municipal sector plan for stormwater management	Updating the water supply and sewerage systems plan
Goal: to develop a municipal sector plan for stormwater management and its integration into a planning system.	Goal: to enhance public utility infrastructure's reliability, quality, and efficiency.
Policy directions: (1) a separate pipe network for stormwater; (2) local stormwater disposal; (3) flood roads and drainage systems (Tromsø kommune 2019).	Policy directions: to develop an investment program.

Local policymaking interactions

Tromsø	Murmansk
Municipal sector plan for stormwater management	Updating the water supply and sewerage systems plan

State-city interactions:

Similarities: creation of legal framework

Differences: enabling governance in Tromsø vs centralist type in Murmansk

City-(consultant) expert interactions:

Similarities: supporting role in providing technical expertise.

Differences: geographical location

Local policymaking interactions

Tromsø	Murmansk
Municipal sector plan for stormwater management	Updating the water supply and sewerage systems plan

Cross-departmental coordination:

Similarities: drafting was led by municipal units

Differences: unit's functionary role in Murmansk vs unit's co-creating leading role and transformative role in Tromsø

Impacts of climate and environmental issues:

Similarities: environmental stressors as factors for policy launch

Differences: aging infrastructure issues in Murmansk vs climate change impacts in Tromsø

Conclusion

Urban-environmental and climate change interactions:

For an environmental stressor to become a driver for a policy launch, it requires recognition by local authorities.

State-city interactions:

Interactions are not grounded in a singular mode of governance but instead are based on the multiplicity of governance approaches.

City-expert interactions:

The functioning roles of non-state actions in local policy development are influenced by factors such as their level of commitment to interaction, knowledge, and internal structural capacities.



Thank you for your attention!
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