

The construction of socioeconomic scenarios to guide adaptation to change in the Eurasian Arctic

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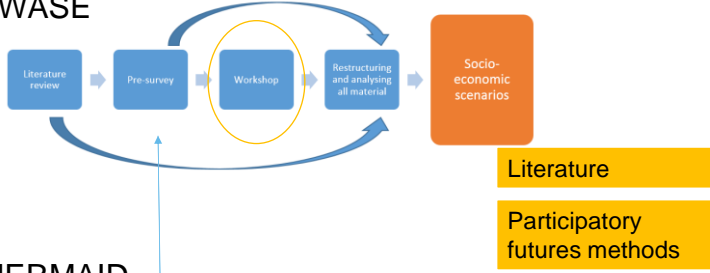
Adaptation Futures 2016
SC 7.1

Background

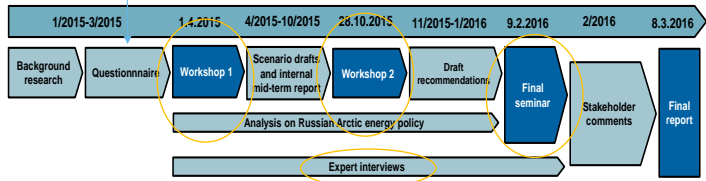
- Two projects:
 - *TWASE - Towards better tailored **W**eather and marine forecasts in the **A**rctic to serve **S**ustainable **E**conomic activities and infrastructure* Research-oriented project
 - *MERMAID - Identifying risks and opportunities for marine transport and tourism in the Arctic* Policy support

Methods

TWASE



MERMAID



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MERMAID: Socio-economic Scenarios for the Eurasian Arctic by 2040

ARCTIC SCENARIOS IN THE MERMAID PROJECT

- EARTH** – Cross-cutting cooperation and challenge management
- FIRE** - Unsafe resource hunt and limited activity
- ICE** – Ice-cold stability and moderate interest

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Factor for Change	"EARTH"	"ICE"	"FIRE"
Climate change and its impacts	Significant positive and negative impacts	Increased risks	Minor impacts
Geopolitical situation and 'great power politics'	Close relationship between Russia and the West due to Russia's democratic development or a balance in the power politics serving both sides Increasing interest toward the Arctic region creates occasional conflicts in power politics	Tension between Russia and the West → confrontation	Increased regionalisation of governance in Russia due to the loss of central power Limited mobility in the Arctic
International cooperation and agreements	Aims at increasing economic activities in the Arctic and focuses on management and mitigation of environmental problems	Central focus in power politics Agreements enable activities in the region but do not further any increase	Tight regulation of activities through international agreements
Infrastructure	Highly developed	Stays at the current level, maintains current activities Development of land and rail transport low degrading accessibility	Expands with small environmental impact Large investments frozen
Arctic know-how and development of Arctic technology	New solutions tested and developed globally and in many sectors Technology used in efficient natural resource exploitation	Know-how recognised, imported and exported Reactive development to challenges	The responsibility of regional stakeholders, no outside interest Proactive, focus on mitigating environmental stress
Global economy	In a stable condition	Asian economies weak African economies developed	Slow and unstable increase and unpredictable economic development
Global markets for fossil fuels	Low demand for oil due to strict climate policy	High-level of medium-term demand and prices	Low demand → low prices

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TWASE: Socio-economic Scenarios for the Eurasian Arctic by 2040

INTERPRETATION OF THE NARRATIVES FOR THE WMS RELEVANT SECTORS

	"Wild West"	"Silicon Valley"	"Exploited Colony"	"Shangri La"	"Conflict Zone"	"Antarctic"
Framing uncertainties	Private – open - dirty	Private – open - clean	Public – open - dirty	Public- open -clean	Closed -dirty	Closed -clean
Resource extraction	Low hanging fruits	Efficient; Respects carrying capacity	Inefficient, old technology	Regulated, Sustainable technologies	Causes conflicts	None
Tourism	Popular destination	Responsible tourism	Difficult access	Responsible tourism	None	Exclusive
Shipping	Traffic jams	Traffic with minimum environmental impact	Supports resource extraction	Traffic regulated by international bodies	Military	Tourism and research

Private-Public-axis refers to who has the initiative and active role in the development of the Arctic.
 Openness refers to the region being seen as open for new expansive actions. A closed Arctic refers to development where human activity is maintained at current levels at most or even reduced.
 Dirty-clean-axis refers to the state of the environment as a result of human intentions.

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Similarities and differences







- Climate change the main driver in both – increases risks but creates also major opportunities
- Geopolitical situation and ‘great power politics’ high in the nationally constructed MERMAID scenarios. This was not seen important in TWASE.

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TWASE: What kind of weather and marine services are needed in the future?

IMPLICATIONS OF EACH SCENARIO FOR WEATHER AND MARINE SERVICES

<p>WILD WEST - High demand for sector specific situational information (from oil, gas and tourism sectors, Search and Rescue operations)</p> 	<p>SILICON VALLEY - High demand; Open data; competitive market (from green and clean entrepreneurs, scientific community, NGOs, private insurances)</p> 	<p>EXPLOITED COLONY - Medium demand both for situational information and more general observations (from oil, gas, construction, other infrastructure, tourism)</p> 
<p>SHANGRI LA - High demand; Tailored services (for shipping, clean technology, tourism)</p> 	<p>CONFLICT ZONE - Low demand for commercial services, high demand for situational awareness and strategically important observations</p> 	<p>ANTARCTIC - Low demand in general, mainly for scientific purposes (for eco- and scientific tourism)</p> 

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MERMAID: Recommendations - general

- 1. Create structures for the responsible development of the Arctic**
- 2. Create clear and supportive structures for Finnish businesses and for Finland to seize international Arctic opportunities**
- 3. Ensure that Finland is at the forefront of Arctic research and know-how**
- 4. Increase and develop open international co-operation and knowledge sharing**

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MERMAID: Recommendations – maritime cluster

- 1. Increase co-operation and create networks with the oil and gas industry, resource and mineral production sectors and the maritime cluster**
- 2. Develop Arctic maritime cluster know-how for the creation of new, innovative pilot products and procedures**
- 3. Establish an offshore and subsea training programme**

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MERMAID: Recommendations – tourism sector

1. **Develop know-how of the Arctic tourism operators**
2. **Use *Arctic is Cool* thinking in tourism**
3. **Advance the physical and digital accessibility of the Arctic**
4. **Participate actively in international advocacy regarding the Arctic**

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Key conclusions & next steps

- Participatory futures scenario methodologies enable the construction of a comprehensive set of socio-economic scenarios when the participating expert pool is versatile enough
- Several different *factors for change* need to be considered in parallel when analysing robust strategies to mitigate future risks and harness the benefits

NEXT STEPS

Evaluation of the economic value of improved Weather and Marine Services in each TWASE scenario.

TWASE –report: tiny.cc/twasereport



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