

The SMART Project

Sustainable Modes of Arctic Resource-driven Transformations

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Goal and Background

The goal of SMART is to contribute to the development of **transformative pathways towards sustainable human-nature interactions in the Arctic** and in the multi-faceted **interplay between Arctic and non-Arctic regions**.

The Arctic is currently warming twice as fast as most other regions on Earth, vividly exemplified by the decreasing extent and volume of Arctic sea ice over the last decades. These transformations are expected to continue for many decades and the increasing accessibility of the Arctic entangles it more and more with the global system through complex temporal and spatial feedbacks with the dynamic economic, technological, social, legal and political processes within and beyond the Arctic.

Understanding and Motivation

The SMART project is unique in its aim of (1) understanding its research process as a **tool-building collaborative process** with stakeholders for addressing societally relevant topics and problems, and (2) of elucidating and disclosing the **tightening connections** or links between the Arctic and regional and global economic, technological, legal and political processes.

With this understanding of the Arctic as embedded in regional and global processes, SMART aims to develop **constructive relationships** between Arctic rights- and stakeholders in and outside the Arctic, and contribute to planning for sustainable Arctic futures, taking into account the **multitude of Arctic settings** with different climatic, ecological, political, and economic conditions.



Primary Geographical Focus On The Eurasian Arctic

- Oil and gas extraction in Eurasian Arctic (Russia, Norway)
- most **significant changes expected**, especially offshore
 - Eurasia is estimated to hold about **63% of the total Arctic resource base** (mostly gas)
 - **high European and Asian demand** for Russian and Norwegian oil and gas
 - **Norway & Russia highly dependent on revenues** from their Arctic oil and gas resources
 - available infrastructure
- Arctic shipping, generally marine transport and coastal infrastructure
- more shipping expected along north-eastern routes and locally in Barents and Kara Seas
 - much infrastructure already exists and is available
 - **better technological systems needed** from US or China

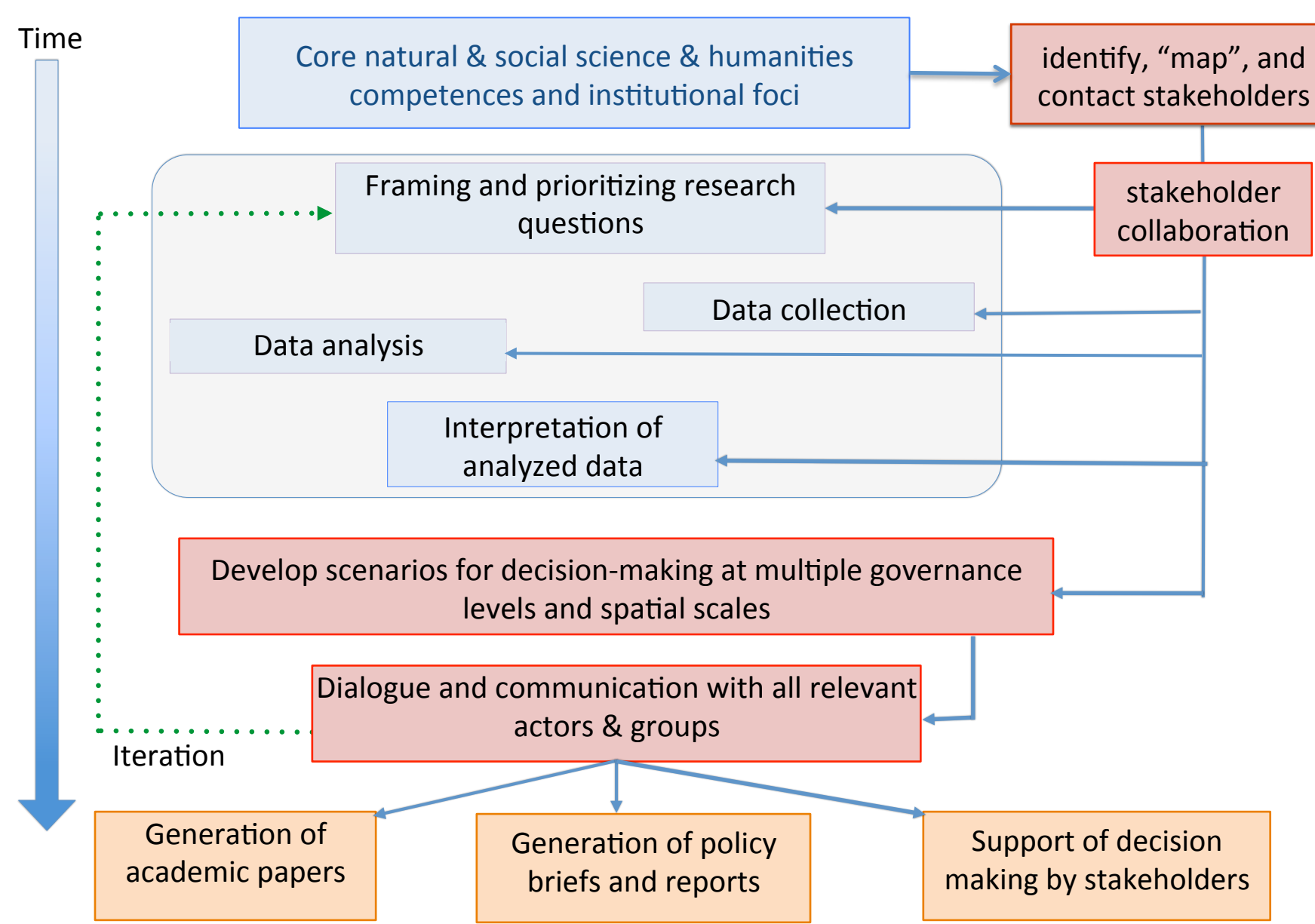
Additional Geographical Focus On Western Greenland

- Oil, gas, and mineral extraction in Western Greenland:
- Most resource exploration and exploitation licenses for oil and gas are **offshore South and West Greenland**
 - Four feasible **mineral extraction** projects in **South Greenland are not yet implemented**
 - Projects are **promoted for Greenland's goals** for economic development, political independence
- We will examine Greenland and the Eurasian Arctic because it will provide a comparison of the
- **Trajectories, processes of development** under different physical, economic, political conditions
 - **Engagement with stakeholders** may be quite different in the two regions for political reasons
 - **Feedback loops** with other regions of the world and the two Arctic regions may differ considerably

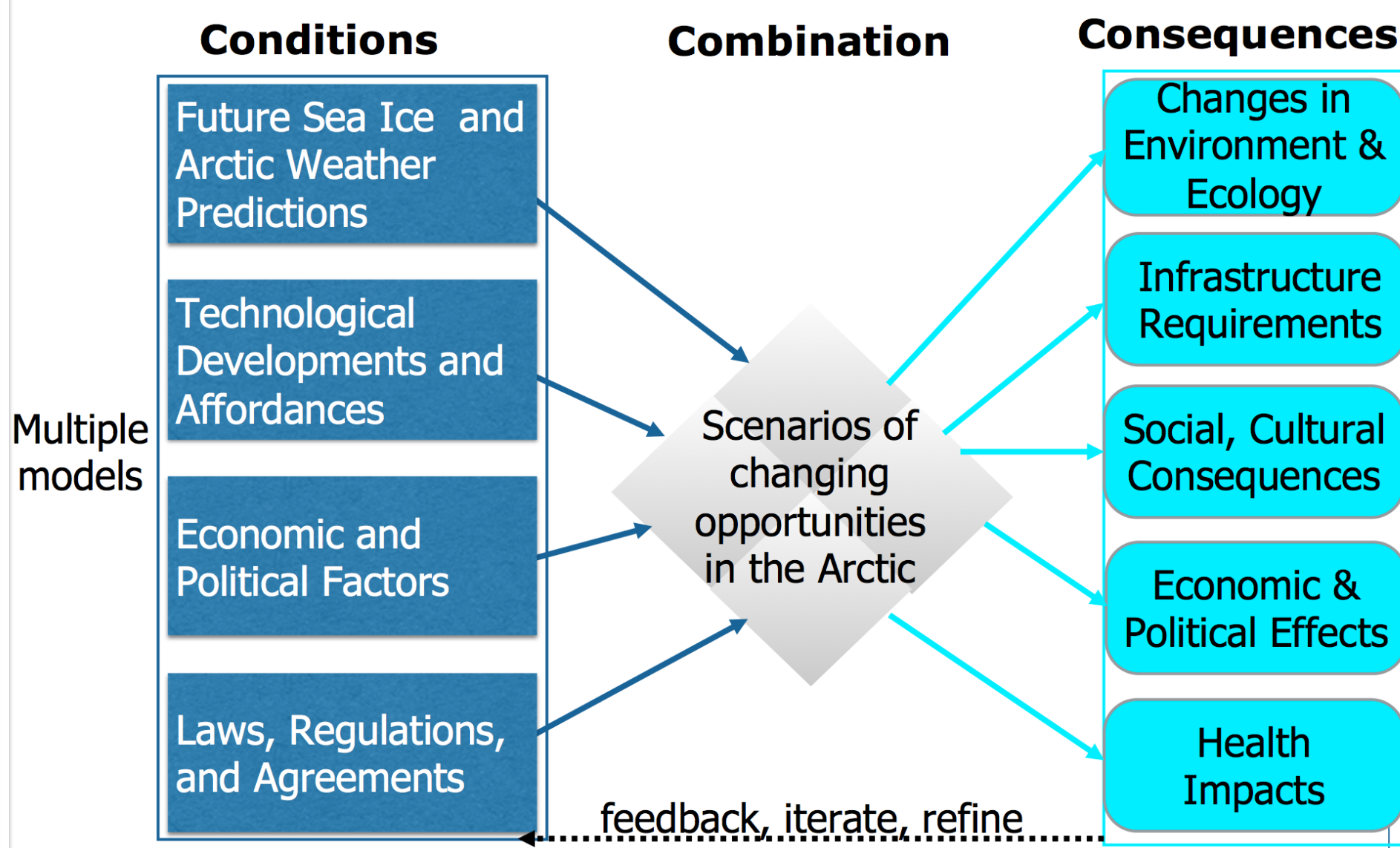
Inter- and Trans-disciplinary Approach

The SMART project strongly integrates natural and social sciences, humanities, and stakeholder knowledge in a **collaborative process**. The knowledge that feeds into the different facets (identifying and framing the issue, focusing it on the desirable outcomes, and finding the means to make the transformative changes) resides with all who hold relevant knowledge both of a formal, scientific sort, and of a contextual type, such as local practice, history, tenure, and culture. This **mutual learning process** results in creation of tools for more effective decision making at multiple levels for greater compliance and trust in advancing common objectives.

Rights- and Stakeholder Roles in the Research Process



Scenario Construction and Use



Core Questions:

1. How can transformations towards sustainability be envisioned, designed and implemented with fair, transparent, and informed participation of stakeholders?
2. Which influences do Arctic stake- and rights-holders and shareholders both inside and outside (e.g., EU, Asian countries) the Arctic have and what are the potential consequences for them in each of the plausible future scenarios?
3. What are the current and near future economic and political factors in plausible scenarios for economic, social, ecological development of the Arctic?
4. What are the factors in success or failure of stakeholder collaboration in developing and using scenarios for decision making at multiple governance levels?
5. Does transdisciplinary collaboration with stakeholders change the relationships between stakeholders? If so, which stakeholders and in what ways?

Main Collaborating Institutions and Resources

- IASS: ClimPol and ELIAS projects
 - Institute of World Economy & International Relations, Russian Academy of Sciences, Moscow
 - Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany
 - Shanghai Institute for International Studies and Ocean University of China
 - Panjab University Department of Political Science, India
 - Nansen International Environmental Remote Sensing Center (NIERSC), St. Petersburg
 - International Institute for Sustainable Development (IISD), Geneva, Switzerland
- External seed funding grants awarded:
- International Social Science Council Transformative Knowledge Networks (with IISD)
 - US National Science Foundation Fast Track Initiative (with Columbia University, Earth Institute, Memorial University of Newfoundland, and University of Calgary)
 - European-Russian Coordination and Support (EuRuCAS) grant with NIERSC

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