

**Understanding Sustainability in the Arctic: A Transdisciplinary Workshop**  
IASC S&HWG, IASSA and ArcticFROST

A group of eight Arctic researchers — anthropologists, ecologists, geographers, and political scientists — came together in Charleston, South Carolina in February 2015 to discuss sustainability and sustainable development in the Arctic, and to develop a white paper on this topic for delivery at ASSW 2015, as part of the ICARP-III process. The workshop, a collaborative effort by IASC's Social and Human Working Group, the International Arctic Social Sciences Association and the US NSF's Research Coordination Network ArcticFrost (Arctic Frontiers of Sustainability), was organized by ArcticFROST PI Dr. Andrey Petrov from the University of Northern Iowa. The workshop built upon ICARP-III town-halls held in Prince George, Canada in May 2014 and in St. Petersburg, Russian Federation in August 2014, as well as discussions at an ArcticFROST meeting in Anchorage Alaska in September 2014, supported in part by IASC.

The white paper will elaborate on the current state of sustainability and sustainable development in the Arctic, while identifying related knowledge gaps and research priorities for the next decade. It will include a historical overview of the concepts of sustainability in global and Arctic contexts, a progress report on research related to Arctic sustainability, and recommendations regarding key priorities for Arctic sustainability research for the next decade.

The interactive workshop was organized around sessions broadly representing the different sections of the white paper. Group discussions and breakout sessions identified relevant literature and projects, and fleshed out and refined the outline of the white paper's sections. In order to evaluate the state of research on sustainability in the Arctic, participants reviewed science plans released by ICARP-II. Of particular interest were Science Plans 1, 2, 10 and 11, focusing on economic development, indigenous considerations, social-ecological change, and research processes and research communication. Workshop participants considered the progress accomplished in addressing research questions and priorities relevant

to sustainability and sustainable development that were laid out in these science plans, and where further research was needed.

Considering both the advancements made (or lack thereof) in sustainability and sustainable development in areas identified by ICARP-II, and new areas of concern that have arisen over the past decade, workshop participants identified numerous future research areas, then assessed these in terms of a set of criteria to develop a smaller set of priority research areas. These include a special focus on methodology, synthesis, indicators, governance, and ecological dimensions.

A first full draft of the white paper will be presented at the ICARP III conference in Toyama, Japan.

**Key findings (preliminary):**

- Arctic sustainability research has deep historical roots and most recently evolved as a part of the emerging sustainability science
- Much of the ICARP II science plans (most specifically 1, 2, 10 and 11) have seen some progress, but many of the tasks remain relevant at present and will be relevant in the future
- Arctic sustainability research has substantially advanced in the last decade:
  - Development of theoretical frameworks, such as social-ecological systems, resilience, adaptation and sustainable development placed within the context of Arctic communities and environments
  - Epistemological transitions to (1) more integrated trans/interdisciplinary research, to (2) mixed method research (including modeling), (3) development of indicators and (4) co-production of knowledge, including community-based approaches to research design, execution, assimilation and dissemination.
  - Growing focus on global-local linkages and multiple scales of sustainability and sustainable development

**Gaps and agenda items for 2025:**

- Improve historical understandings of sustainable development in respect to the Arctic
- Continuing enhancement of trans/interdisciplinarity, further advancement of coupled social-ecological systems theory and related conceptual frameworks
- Focus on synthesis of various case studies and disciplinary contributions
- Focus on understanding sustainability as a process
- Incorporate modeling in interdisciplinary mixed-methods knowledge-co-production methodologies
- Continue developing community-based and community-relevant indicators and monitoring frameworks of sustainable development

- Focus on longitudinal studies, especially through applying long-term, generational timeframes
- Advance our knowledge about scales of sustainability and equity in the context of sustainable develop

*List of participants*

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