Justiina Dahl, Report for IASC on the SHWG Activity:

Meaningful multi-disciplinarity and the governance of evolving global dynamics in the Arctic: Towards a more materialistic study of world politics

Workshop Agendas

See attachments.

Scientific highlights:

- The notion of "boundary objects" from Science and Technology Studies offers one way to enter the analysis of why specific initiatives that include conflicting interests, many actors and a need for collaboration thrive and others do not.
- An exercise of translating and discussing the different social worlds present and interconnected to work sites of scientists is one way of acknowledging silenced or implicated actors and biases in research design i.e. rising out from differences in temporal and spatial scales.
- In translating visions and reaching out to new audiences, visual interpretations or story lines can sometimes work as better tools in initial communication than mere numeric data.
- In cross-disciplinary research planning there should be enough time planned for interchange between the different paradigms. This ensures that there is a respect for the differences in them. It also lessens the tendency of setting different paradigms in hierarchical position against each other.

Workshop Summary Report

The first of the two workshops sessions this activity consisted of took place at the Artic Science Summit Week in Prague on 6.4.2017. It began with a session on a roundtable-session with presentations from three early-career and three senior-scientists about their experiences in participating and organizing multi-disciplinary or multi-stakeholder workshops or projects that have, in one way or another, used specific material entities to facilitate communication and cooperation between participants from different social worlds.

At the beginning of the workshop each participant gave a 5-minute-talk. The presenters and the titles of their talks were as follows:

• **Sandy Starkweather**, The US Interagency Arctic Research Policy Committee: "Collaborations – Collaborative Infrastructure as an Engineered Boundary Object"
• **Aslı Tepecik Diş**, KTH Royal Technical Institute, Stockholm: "The Fulbright Arctic Initiative Program Interdisciplinary Cooperation for a Sustainable Arctic Region"
• **Ingrid Medby**, University College London: "A Map's Lines of Connection: Representation Beyond and Across Represented Boundaries"
• **Susanna Gartler**, University of Vienna: "The interactive map of the 'Old Village' in Mayo, Yukon Territory: Can this collaborative, multi-stakeholder endeavor be seen as a 'boundary object'?"
• **Kathrin Keil**, Institute for Advanced Sustainability Studies (IASS), Potsdam, Germany: "Developing an Arctic inter- and transdisciplinary research project involving the concept of boundary object"
• **Nadezhda Kharlampieva**, The Arctic and Antarctic Research Institute, Department of Hydrology and Water resources of the Russian Arctic: "Interdisciplinary cooperation between Russian and Chinese universities on Arctic governance"

After their talks the presenters discussed how these kinds of innovations in multi-stakeholder engagement can contribute to a more comprehensive understanding of the challenges and opportunities for human activity in the future Arctic and how their approaches compared with each other. The kinds of issues that were raised in this discussion included; using entities such as maps to articulate shared and contrasting meanings of 'Arcticness' and location; how the Fulbright Arctic Initiative and the US Interagency Arctic Research Policy Committee work as engineered boundary objects because of their organic structure; and how there is a tendency in cross-disciplinary research partnerships to initially view treat social sciences as consisting of less rigorous epistemology, theory and methods.

The second part of the session followed a more traditional workshop format. It began with a presentation of the broader disciplinary context of the methods of boundary objects and a short introduction to this theory and method. After this presentation the workshop participants answered a set of questions that included:

- What are the arenas where you work and what you work with? (i.e. spaces, institutions, field sites, archives)
- What does it take for you to get to these sites? (i.e. transportation, funding, ethics review)
- What are the technologies and tools you use in your work?
- What actors/actants are possibly missing from the standpoint of other participants and disciplines? (implicated actors)
- What kind of consequences, challenges and possibilities their inclusion would have to the research design might pose for your work?
- What are social worlds that could potentially restrict you from doing your work?

The second workshop session took place in the IX International Congress for Arctic Social Sciences in Umeå 11.6.2017. The first part of this workshop began with a short five-minute introduction to 'Boundary Objects' as the main organizing principle of the activity. It continued by four 8-minute talks that were titled as follows:

• **Tracie Curry,** University of Alaska Fairbanks: "Visual tools as boundary objects to support knowledge transmission and shared understanding in transdisciplinary interactions"
• **Sarah Inman**, University of Washington: "Data Upstream: Multidisciplinary Collaboration for Wild Alaskan Salmon"
• **Eduard Zdor**, University Alaska Fairbanks: "From Customary Law to Policy: Lessons from Working with Indigenous Marine Mammal Hunters, Scientists, and Legislators"
• **Jamie Snook**, University of Guelph: "Indigenous Co-management as a Boundary Object"

Like the first session of at ASSW these presentations were followed by a roundtable and a Question and Answer session. In the Q&A the presenters were given the first change to pose questions and comment on each others' work. They inquired i.e. about the applicability of visual technologies to getting different potential users of data together and the possibilities for improving the two-way communication between co-management suggestions and final outcomes in provincial administration.

The second session was designed to follow a workshop format like the one at the ASSW. It began with a presentation on the theory of boundary objects after which I presented a slide with questions titled: "Mapping different social worlds present at or connected to your work site(s)". Instead of answering the questions, the participants started to inquire whether the aim of the workshop was to completely abandon and reconstruct the social scientific research process. This led to a group discussion about the nature of the workshop as one exploratory approach in seeking to find new solutions to what in many sessions at ICASS and in the field of critical studies more generally has been identified as non-satisfactory results of research design and engagement across disciplines and communities in Arctic science and policy.

The group discussion continued with participants giving examples of problems of translation in relation to the role prescribed to indigenous "witnesses" of climate change in COP 15, and how different users of sea ice describe it either as a hindrance or a highway and how in governing increasing human activities around it could be useful that the values and norms behind these perceptions are voiced out.

1-Paragraph description of the workshop for the IASC Website

The aim of these two workshops organized at the 2017 Arctic Science Summit Week and the IX International Congress of Social Science was to facilitate the communication of one's own work, interests, goals, and motivations to different audiences and social worlds in the search for opportunities for improved or new, future cooperation. The workshops were organized around the analytical concept of 'boundary objects' from Science and Technology Studies. This is notion facilitates the empirical study of how partnerships between different social worlds have organically been built or emerged through communication and translation in shared work. One of the specificities of this kind of approach in a social study of science is that the focus in this analysis is on the objects of shared work rather than pre-defined social scientific categories following age, ethnicity or culture. The presentations in the two workshops ranged from maps to international and national science initiatives and visual illustration tools. The variety of examples illustrated how almost anything can work as a 'boundary object' in cooperation if it is flexible enough to enable organic change in us and enables individuals from different social worlds to work together for everyone's own benefit. Two of the common factors for success in focusing and identifying common objects and objectives for work that were identified were firstly that in cross-disciplinary research planning there is enough time and space for interchange between the different paradigms. This ensures that there is respect for the differences in them, and lessens the tendency of setting different paradigms in hierarchical position against each other. Secondly, engagement in a discussion about all the possible social worlds present and interconnected to work sites of scientists is one way of empowering previously silences and implicated actors and getting rid of biases in research design that can i.e. rise out of differences in temporal and spatial scales in different paradigms.