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Introduction

Our understanding of the Arctic rests to a great extent on the capacity to build long-term observations series. The overall aim of these scientifically based observations is to reach a sustainable development that counter-acts the troublesome future scenario we foresee today. While major drivers of climate change are found outside the Arctic, there is nevertheless a strong need also for the four million people that live in the Arctic to act responsible in order to create capacity for sustainable development. The UN Sustainable Development Goals (SDGs) offer an important framework for both guiding a sustainable development of the region, as well as for improving existing and developing new observation and monitoring systems for the Arctic. This allows an approach where the challenges, changes and the adaptation potential of societies and the ecological systems can be well monitored.

The 17 goals and 169 targets of the SDGs are set up as an integrated and indivisible concept to enable a global sustainable development (UN, 2015). They are unprecedented in scope and significance (ibid.), however, this global approach has also been criticised as being top-down and too focused on the belief that global problems can be solved on the level of governments and international organisations (Hajer et al., 2015). In order to be relevant to specific contexts, the goals and their targets would need to be scaled down from their global level (Burford et al., 2013).

This especially holds true when applying the SDGs to the Arctic. The SDGs have “not been produced with the Polar Regions in mind” (Sköld et al., 2018), which has led to discrepancies to how well the SDGs, their targets and indicators apply to the High North. Due to this mismatch, it is unlikely that pathways towards implementing the SDGs in the Arctic can effectively be assessed and tracked (ibid.). Sköld et al. (2018:3) thus states that ”[t]here is a dire need for a suite of polar indicators that allow us to cross-reference to the SDGs while having the tool to

monitor change in the Polar Regions. Developing such a suite of polar indicators will necessarily inform work on a post-2030 development agenda." Further it is important to find the prerequisites that will enable UN member states to address sustainable development issues in their countries in a way that gives meaning to 'nationally owned development' (Adams, 2015:2).

SDG indicators and the need to put them into context

The 232 indicators of the SDGs can be regarded as a voluntary management tool to comprehend if sustainable development measures prove successful and if the SDGs are on track. While the UN (2017a) has acknowledged that the indicators need to be adjusted to local needs and priorities under involvement of stakeholders, the indicators are still criticized to be of little relevance to local communities (Simon et al., 2016; Sköld et al., 2018). In the Arctic for example, climate change especially affects indigenous peoples whose way of life, culture and identity are closely interwoven with the environment (Adger et al., 2012; Reid et al., 2014). Sustainable development indicators should also monitor the "invisible" losses and changes that are not directly measurable, but play an important role for individuals and communities, such as culture, self-determination and wellbeing (Wolf et al., 2013:549).

Already in the development of the Millennium Development Goals (MDGs), the forerunner of the SDGs, the UN Permanent Forum on Indigenous Issues (UN-PFII) raised its concern that none of the available indicators were appropriate to measure the process of the MDGs in the cultural context of indigenous peoples (UN-PFII, 2006; Burford et al., 2013). Sköld et al. (2018) also point out that in the current SDGs no single indicator focusses on cultural wellbeing or on the retention of ancestral languages. Further, the economic indicators do not pay account to the importance of mixed and subsistence economies, while migration related indicators (10.7.1 and 10.7.2) are not applicable to the rapid population and demographic shifts in the Arctic (ibid). Appropriate, context-relevant indicators are thus needed that integrate "all possible levels of the polar social-ecological systems (including the atmosphere, cryosphere, hydrosphere, biosphere and socio-cultural and politico-economic systems)" (Sköld et al., 2018:4).

Suggested strategy

This statement advocates developing a suite of polar indicators to assess the state of the social-ecological systems in the Arctic, and to create guidelines for sustainable monitoring and regular assessments that track the progress on pathways towards a sustainable development. This would improve disaster preparedness, the adaptive capacity of hard and soft infrastructures, address food, water and energy security, and sustainable economic development (Sköld et al., 2018).

Various efforts are already working towards this goal: The Arctic Council Sustainable Development Working Group for example proposed a suite of Arctic Social Indicators (ASI, 2014) and the US National Oceanic and Atmospheric Administration currently funds a project that looks into possibilities for defining relevant indicators that asses biophysical changes in the Arctic. These projects, however, represent fragmented and disconnected efforts. What is needed is a comprehensive and integrated suite of polar indicators, which includes (1) relevant elements from the biophysical, socio-cultural, and politico-economic environments, and (2) accounts for their often coupled nature (Sköld et al., 2018).

When selecting appropriate indicators, it is necessary to compare the amount of data already provided (and their potential use for assessing progress) with the cost of creating the necessary soft infrastructure to collect the relevant data. It is also essential to co-produce the indicators with scientific experts and stake- and right holders respectively and to validate their appropriateness with local communities in the Arctic (Sköld et al., 2018).

Furthermore, these indicators are only useful if the relevant information is collected on sustained, i.e. long-term, basis. This has been a problem for many small-scale research projects, as they typically do not concern themselves with a sustained collection of information beyond the project's duration. This was also a problem with the MDGs where 46% of the data needed

were not available for reporting at the end of 2015, and the challenge is apparent for the present UNECE member countries to currently be able to produce data in support of SDG indicators (Road map, 2017).

The way forward

We can conclude that accurate and relevant indicators for the Arctic need to be developed and that sustained and feasible monitoring has to be ensured. This will enable us to observe changes in the complex polar social-ecological systems on a long-term basis and to develop meaningful sustainable development measures based on these observations (Sköld et al., 2018). “Unless, we commit to this [initiative] now, we will miss a unique opportunity to be prepared for the future in the Arctic, to build an informed post-2030 development agenda and to link the SDGs to developments and change in the Arctic region.” (Sköld et al., 2018:4). In developing relevant SDG indicators for the Arctic, we suggest the following steps:

- examination of the existing SDGs indicators' framework and seeing what indicators apply to the Arctic;
- examination of what other indicators for the Polar Regions have been used/proposed in social science projects (e.g. Arctic Social Indicators, Arctic Human Development Report, ECONOR); it would be equally essential to reach out to natural scientists and representatives of indigenous and local communities for their input;
- estimation of how much data is collected for the current indicators. Even if this data is stored in various forms, locations and institutions, such information could be a great starting point to show the present knowledge about Polar Social and Environmental Standards.

Finally, it is important to establish a relation to non-Arctic partners involved in implementing the Agenda 2030, and specifically the use of the SDG indicators. There is a lot to be learned from the work of others, both at regional and national levels, and vice versa the efforts in the Arctic can add significant value to the progress in other regions (a joint discussion has already

been established with the Hindu Kush Himalaya Region). This efforts respond to the United Nations, which urges

- "international organizations to base the global review on data produced by national statistical systems and, if specific country data are not available for reliable estimation, to consult with concerned countries to produce and validate modelled estimates before publication",
- "that communication and coordination among international organizations be enhanced in order to avoid duplicate reports, ensure consistency of data and reduce response burdens on countries",
- "international organizations to provide the methodologies used to harmonize country data for international comparability and produce estimates through transparent mechanisms" (United Nations, 2017b:3).

Background

This statement is based on the EU-PolarNet White Paper: The Road to the Desired States of Social-Ecological Systems in the Polar Regions (Sköld et al., 2018), which was developed at the EU-PolarNet white paper workshop. The objective of the workshop, which took place in September 2017 in Spain, was to develop five white papers with topics of high interest to the European society. It brought together thoroughly chosen international polar experts including natural and social scientists, representatives of indigenous peoples and business representatives.

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