

# HELSUS | POLICY BRIEF | 1/2021

## Promoting comprehensive sustainability in strategy work in the Arctic

### IN BRIEF

As a result of climate change, the Arctic has changed. The changes are particularly evident in the weakening of biodiversity and cultural vitality. These changes present significant challenges to the future of the Arctic regions. The purpose of this policy recommendation is to demonstrate, by using examples from Finland, how the different dimensions of sustainability must be comprehensively considered when preparing strategies concerning the Arctic.

### A CHANGING UNDERSTANDING OF SUSTAINABILITY

Sustainability has traditionally been understood as the equitable achievement of objectives in three pillars, which are ecological, economic and social sustainability. In light of climate change, loss of biodiversity, and many other challenges, it is evident that societal change is currently not fast enough, nor is it moving in the right direction in terms of equitable achievement of the objectives mentioned above. Economic objectives have overtaken ecological and social ones. For this reason, new definitions of sustainability have been presented. One approach is the doughnut model, which places a sustainable economy in the middle of a

“doughnut”, the core of which is sustainable prosperity. Sustainable prosperity fulfils necessary human needs, such as providing food, health, and fairness, without exceeding the ecological carrying capacity. In the outer circle, the ecological carrying capacity is defined according to the nine planetary boundaries (see Figure 1). The current concept of sustainability is defined by different concepts of change, and sustainability transition is a frequently used term. Sustainability transition is based on the understanding that achieving sustainability means re-thinking our entire current system from different viewpoints. Transition impacts all our actions in a comprehensive way.

### CONFLICTING OBJECTIVES OF THE SUSTAINABILITY TRANSITION

Promoting different objectives of sustainability may be contradictory in some cases. Although the achievement of different objectives of sustainability transition has more synergistic than negative cross-impacts on the global and domestic levels, it is clear that achieving one set of objectives may have a negative impact on achieving other objectives.

For example, promoting the objectives of sustainable development goals in the form of cleaner energy may at times be in conflict with safeguarding the rights and means of livelihood of Indigenous Peoples and local communities in the Arctic. Proactive identification of negative impacts and conflicts contributes to the ability to plan the management of these cross-impacts. The conflicts between objectives should also be taken into account when discussing the promotion of sustainable mobility and the construction of a sustainable infrastructure. Then again, identifying and examining cross-impacts supports the simultaneous advancement of different dimensions of sustainability.

### THE ECOSYSTEM IMPACTS OF CHANGES IN LAND USE MUST BE RECOGNISED

Human activity is increasing in the Arctic, and as a result, issues of land use are particularly important. Climate change mitigation and the requirements for a sustainable future are leading to new industries, policies and technologies, such as circular economy and bioeconomy. The increasing activity and new industries are strongly linked to land use and changes therein. The planning of land use must take into consideration the cumulative impact of land use and climate change on the overall functioning of the ecosystem. Land

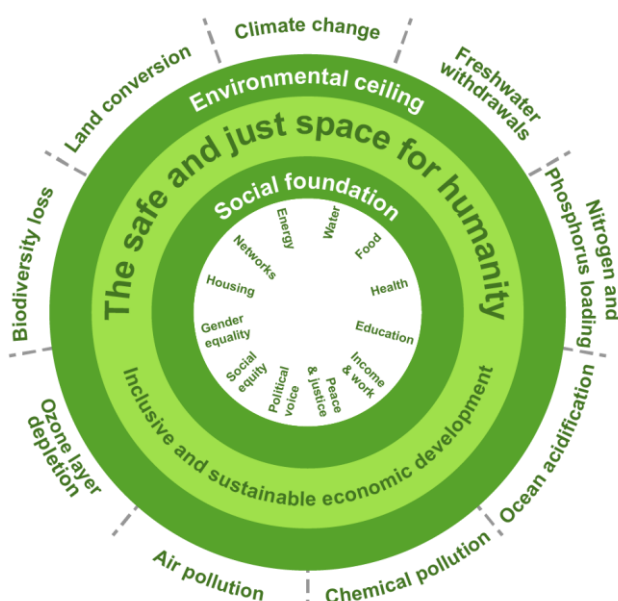


Figure 1. Doughnut model. Redrawn from, Raworth, K. (2017): [https://commons.wikimedia.org/wiki/File:Doughnut\\_\(economic\\_model\).jpg](https://commons.wikimedia.org/wiki/File:Doughnut_(economic_model).jpg) (Figure: Joonas Mykkänen).

use in a catchment area impacts the state of lakes, rivers and other bodies of water, and climate change may further strengthen the connection between aquatic environments and their catchment areas, for example.<sup>1</sup>

The overall review and the resolution of conflicts related to land use must take into account both the environmental and economic aspects and the social and cultural dimensions of sustainability. In particular, this applies to land use in cases where several sectors want to increase their activities in an area. The mining industry, bioeconomy, tourism, and natural means of livelihood often operate in the same areas. The mining industry, for example, has a direct and indirect impact on other sectors. At the same time, among others, the development of tourism in the Arctic is a great opportunity, but tourism also has various impacts on other sectors. The resolution of conflicts and the coordination of different forms of use in a way that simultaneously safeguards the operation of natural means of livelihood may be challenging. For this reason, it is of paramount importance to attempt to engage the different actors in dialogue and develop culturally sensitive policies.<sup>2</sup>



**Figure 2.** The Arctic nature is sensitive to change, and its diversity is decreasing, especially due to climate change. Photo from Ailigga, Karigasniemi. ©Hanna Guttorm.

## **PRESERVING BIODIVERSITY IS A PREREQUISITE FOR THE SUSTAINABILITY TRANSITION**

Biodiversity is decreasing in the Arctic.<sup>3</sup> The greatest threat is global warming, which forces species to migrate north as their habitats change. Climate change also contributes to the spread of harmful invasive species into the Arctic. Furthermore, changes in land use and other human activities threaten biodiversity. Currently, 38% of the alpine habitats

typical to Arctic nature are classified as threatened in Finland,<sup>4</sup> and nearly the same percentage of species present on alpine habitats are threatened, for example.<sup>5</sup>

The sustainable future of the Arctic is materially based on the preservation of its diverse nature, as well as local culture and means of livelihood. In particular, land use and the use of natural resources cannot be sustainable if the activities threaten biodiversity in the Arctic. It should also be recognised that the impacts of individual activities may vary in time and place: grazing by reindeer weakens the state of many alpine habitats but maintains the diversity of other habitats.<sup>4</sup>

The planning and management of land use must take into account both biodiversity and the diversity of cultures and means of livelihood: the planned operations must not threaten the state of Arctic species or habitats. The preservation of biodiversity is also a prerequisite for the prosperity of Indigenous Peoples and local actors.<sup>6</sup> For the biota to have the opportunity to adapt to a warming climate, it is important to preserve a sufficiently comprehensive network of areas relevant to biodiversity and guarantee that they remain connected. This requires action on both domestic and international levels.

### **BIOCULTURAL APPROACH TO SUSTAINABILITY**

“Nature” and “culture” have an unbreakable connection. This is evident in the mutual links between natural means of livelihood and Indigenous cultures: the Sámi languages have been best preserved in reindeer husbandry and handicrafts (duodji), for example. Where the revival of languages and cultures take into account the environments which they have important connections to, nature can also be strengthened and revitalised alongside culture. For instance, the salmon populations in the rivers, traditional fishing methods and Sámi languages have been successfully revitalised at the same time. Scientific study that also integrates local knowledge significantly helps to resolve the major issues of the world, such as the loss of species and the impoverishment of the cultural spectrum related to the climate.

<sup>1</sup> Jeppesen, E., Christoffersen, K.S., Rautio, M. & Lauridsen, T.L. (2021). Ecology of Arctic Lakes and Ponds. In Thomas, D.N. (eds.), *Arctic Ecology*, (pp. 159-180). Hoboken, NJ: Wiley-Blackwell.

<sup>2</sup> Jokinen, M. (2019). *Lapin ympäristökiistojen kulttuuriset tekijät*. (Doctoral Dissertation, University of Helsinki). Available from: <https://doi.org/10.14214/df.281>.

<sup>3</sup> CAFF (2013). *Arctic Biodiversity Assessment. Status and trends in Arctic biodiversity*. Akureyri: Conservation of Arctic Flora and Fauna.

<sup>4</sup> Kontula, T. & Raunio, A. (eds.). (2018). *Suomen luontotyypin uhanalaisuus 2018. Luontotyypin punainen kirja – Osa 1: Tulokset ja arvioinnin perusteet*. Helsinki: Suomen ympäristökeskus ja ympäristöministeriö. Suomen ympäristö 5/2018. p. 388.

<sup>5</sup> Hyvärinen, E., Juslén, A., Kemppainen, E., Uddström, A. & Liukko, U.-M. (eds.) (2019). *Suomen lajien uhanalaisuus – Punainen kirja 2019*. Helsinki: Ympäristöministeriö & Suomen ympäristökeskus. p. 704.

<sup>6</sup> Virtanen, P. K., Siragusa, L. & Guttorm, H. (2020). Introduction: Toward more inclusive definitions of sustainability. *Current Opinion in Environmental Sustainability*, 43, pp. 70–82.

## THE ENGAGEMENT OF INDIGENOUS PEOPLES MUST BE SAFEGUARDED

The obligation to negotiate with Indigenous Peoples supports sustainability. According to the Akwé: Kon guidelines, the rights of Indigenous Peoples and local communities must be given broad recognition by reviewing the impacts of climate, economic and other policies on the prosperity of the people who are connected to the local environment. Indigenous Peoples must be comprehensively engaged in decision-making, for example, by including representatives of Indigenous Peoples and local actors in decision-making and executive bodies. Promoting the rights of Indigenous Peoples is also strongly linked to safeguarding biodiversity.

The opportunity to continue traditional means of livelihood, such as reindeer husbandry, fishing, hunting, handicrafts, and foraging have a direct impact on the health of communities practising natural means of living, and therefore they must be guaranteed this opportunity by means of inclusive legislation. The economic opportunities for artisanship and art must also be strengthened and the cultural abuse of Indigenous Peoples reduced in tourism, for example.

All children of Indigenous Peoples, also those living outside their home regions, must have the right to a comprehensive education focused on their own people's language, culture, and relationship to nature.<sup>7</sup> The further development of remote education increases equality in education and enables the study of native languages outside the Indigenous population areas, as well.

The accessibility of services in Indigenous languages must be promoted by cross-border coordination. Cross-border coordination between local communities across the borders of nation states also supports the sustainability transition.

## MORE DIVERSE INFORMATION FOR DECISION-MAKING

Taking into account different forms of information in both decision-making and research contributes to the sustainable future of the Arctic. Through dialogue and engagement, consultations and impact assessments must consider the local knowledge on the environment and climate, which is

<sup>7</sup> Toivanen, R. & Fabritius, N. (2020). Arctic youth transcending notions of 'culture' and 'nature': emancipative discourses of place for cultural sustainability. *Current Opinion in Environmental Sustainability*, 43, pp. 58-64. Available from: <https://doi.org/10.1016/j.cosust.2020.02.003>.

based on deep experience and familiarity with the location.<sup>8</sup> In addition to this cross-generational, experience-based knowledge, values that respect nature are central to Indigenous Peoples.

There is plenty of information available on the history and present-day situation of Indigenous Peoples, but this has still not been sufficiently considered in the decision-making and education of the majority of the population. More ethical and sustainable research on the local information systems of Indigenous Peoples must be included in secondary and higher education. This information may contribute to safeguarding biodiversity, promoting a more diverse understanding of education, and support the achievement of reconciliation and trust between Indigenous Peoples and the majority populations. Furthermore, open information on industrial operations or shipping activities in the Arctic supports closer international cooperation and promotes the use of more sustainable solutions.

## THE RIGHTS OF INDIGENOUS PEOPLES

The world currently has about 370 million people who belong to Indigenous populations and speak approximately 5,000 different languages. About 40 Indigenous Peoples live in the Arctic, although they make up only approximately 10% of the total population in the region. The languages of these people express lived knowledge related to biodiversity that concerns the local climate, snow, animals, plants and land areas, but the languages and cultures themselves are also endangered. The diverse means of livelihood of the Indigenous Peoples of the Arctic have generated fewer environmental impacts compared to the majority of the population. The International Labour Organization (ILO) convention concerning Indigenous and tribal peoples (no. 169) and the United Nations (UN) Declaration on the Rights of Indigenous Peoples support the national regulation of the rights of Indigenous Peoples. According to these documents, Indigenous Peoples must be able to participate in decision-making that concerns them.

<sup>8</sup> Virtanen, P. K., Keskitalo, P. & Olsen, T. (eds.) (2021). *Indigenous Research Methodologies in Sámi and Global Contexts*. Leiden: Brill.

Helsinki Institute of Sustainability Science HELSUS brings together research and education of sustainability science from seven faculties and three campuses of the University of Helsinki.

HELSINKI.FI/HELSUS | TWITTER: @HELSINKISUS | HELSUS@HELSINKI.FI

## **ADAPTING TO CHANGES IS BASED ON CONSIDERATION OF THE DIFFERENT DIMENSIONS OF SUSTAINABILITY**

At the core of the changes needed to achieve sustainability lies the understanding that we are in close interaction in terms of human and natural systems, that we form socioecological systems. Continuous change is a part of the functioning of ecosystems. Traditionally, changes can be predicted, and human communities have been able to adapt to them reasonably well. For this reason, they have traditionally been approached with technical solutions that increase the communities' ability to live with the changes. However, now we are in a new situation, where the changes are historically rapid and exceed the frequency of previous changes. Maintaining functionality in changed conditions brought on by rapid environmental changes exceptionally requires also a fundamental change in the functioning of local communities, such as in the ways they use nature to obtain a livelihood. For example, reindeer husbandry has already undergone radical changes in the last decades. Adaptable management aims to simultaneously slow down (mitigate) the change and provide tools for safeguarding the functioning of the community in changing conditions (adaptability).

In terms of the Arctic, decision-making should focus on the development of tools for adaptable management. These include building future scenarios and developing various indicators and variables that can be used to monitor and predict changes. At the same time, it should be ensured that they take the different dimensions of sustainability into account. Achieving these objectives requires considering the rights of Indigenous Peoples, maintaining biodiversity, managing climate change, and safeguarding the functional requirements of the local communities.

### **RECOMMENDATIONS**

- The Arctic Council and other actors in the Arctic must actively work to promote the overall sustainability of the Arctic and resolve conflicting objectives by contributing to an open exchange of information and tightening international cooperation.
- A comprehensive assessment of the sustainability of both nature and the Indigenous and local communities must be carried out for all national-level decision-making in the Arctic. When implementing the assessment, it is essential to engage the locals in the

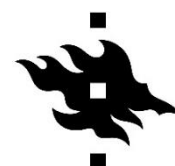
impact mapping, analysis, final decision-making, and follow-up of decision-making measures.

- Actors in both the public and the private sector must comprehensively take into account the local environmental and climate knowledge and values that respect the environment when carrying out operations that affect the land and bodies of water. This requires that representatives of the Indigenous Peoples and local actors are included in decision-making bodies and executive bodies.
- National-level strategies that address the Arctic must emphasise the significance of open information, which makes it possible to simultaneously promote different dimensions of sustainability. Open information must be ethically sustainable and support the implementation of the rights of Indigenous Peoples.
- Information related to Indigenous Peoples must be increased in all levels of school education. The right of the Indigenous Peoples to comprehensive education in their own language that focuses on the relationship with nature must be safeguarded in strategies concerning the Arctic.

### **AUTHORS**

Reetta Toivanen, Professor, HELSUS  
Pirjo Kristiina Virtanen, Associate Professor, HELSUS  
Jussi T. Eronen, Associate Professor, HELSUS  
Hanna Guttorm, Senior Researcher, HELSUS  
Inari Helle, Researcher, HELSUS  
Kaisa Korhonen-Kurki, Programme Director, HELSUS  
Linda Lammensalo, Research Assistant, HELSUS

**HELSUS**  
HELSINKI INSTITUTE OF SUSTAINABILITY SCIENCE



UNIVERSITY OF HELSINKI

HELSUS Policy Brief Series

ISSN 2737-2103

ISBN 978-951-51-7563-2 (nid.)

ISBN 978-951-51-7564-9 (PDF)

<http://urn.fi/URN:ISBN:978-951-51-7564-9>

**Helsinki Institute of Sustainability Science HELSUS brings together research and education of sustainability science from seven faculties and three campuses of the University of Helsinki.**

**HELSINKI.FI/HELSUS | TWITTER: @HELSINKISUS | HELSUS@HELSINKI.FI**